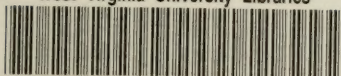



West Virginia University Libraries



3 0802 102215467 0



Digitized by the Internet Archive  
in 2011 with funding from  
LYRASIS Members and Sloan Foundation



History  
Room

R

747

W57

A31

1978-1984

RECEIVED

FEB 09 2010

WVU HEALTH  
SCIENCES LIBRARY

DATE DUE

[illegible]





# West Virginia University Bulletin

**1978-79**

## **Medical Center Catalog**





Medical Education Building, Charleston Division of the WVU Medical Center.

COVER: Marble pylons at the entrance to the Basic Sciences Building of the WVU Medical Center depict milestones in the history of the health sciences.



West Virginia University

Medical Center

1978-79 Catalog

---

Medical Center Basic Sciences

School of Dentistry

Dental Hygiene

School of Medicine

Medical Technology

Physical Therapy

School of Nursing

School of Pharmacy

13 23 PT 2384  
01/10 MAG  
05-115-04 DRUG  
Hill Group

West Virginia University is an Equal Opportunity-Affirmative Action employer. In compliance with Federal Executive Order No. 11246 as amended, Title VII of the Civil Rights Act, West Virginia Human Rights Act, Title IX (Educational Amendments of 1972), Sections 503 and 504 of the Rehabilitation Act of 1973, and other applicable laws and regulations, the University provides equal opportunity to all prospective and current members of the student body, faculty, and staff on the basis of individual qualifications and merit without regard to race, sex, religion, age, national origin, or handicap, as identified and defined by law.

The University neither affiliates knowingly with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, color, age, religion, sex, national origin, or handicap, as defined by applicable laws and regulations.

—Office of the President

### West Virginia Board of Regents

950 Kanawha Boulevard, East

Charleston, WV 25301

Earle T. Andrews, Berkeley Springs  
Dr. Forrest L. Blair, Walker  
Amos A. Bolen, Lewisburg  
Andrew L. Clark, Princeton  
Sue Seibert Farnsworth, Wheeling  
Paul J. Gilmer, Charleston  
Edward H. Greene, Huntington  
Russell I. Isaacs, Charleston  
Albert M. Morgan, Morgantown  
I. Dee Peters, ex officio, Morgantown  
Daniel B. Taylor, ex-officio, Charleston  
Perry F. Watson, ex-officio, Charleston  
Ben L. Morton, *Chancellor*, Charleston

### West Virginia University Advisory Board

Office of the President

Morgantown, WV 26506

Charles C. Wise, Jr., *Chairman*, Charleston  
Paul B. Martin, *Vice-Chairman*, Martinsburg  
Lea E. Anderson, Shinnston  
Robert E. Mentzer, Weirton  
Richard A. Raese, Morgantown  
Fred R. Toothman, Huntington  
Dr. A. J. Villani, Welch  
Harold J. Shamberger, *Secretary*  
Gene A. Budig, *President*

West Virginia University Bulletin

Series 78, No. 9-3, March, 1978

Issued Monday, Wednesday, and Friday

Second-class postage paid at Morgantown, WV 26506



# Contents

University Calendar, 1978-79 . . . . .	4
West Virginia University Medical Center . . . . .	5
University Hospital . . . . .	6
Radiologic Technology . . . . .	6
Coordinated Undergraduate Dietetics Program . . . . .	7
Admissions . . . . .	8
Fees and Expenses . . . . .	13
Regulations Affecting Degrees . . . . .	20
Medical Center Basic Sciences . . . . .	34
Anatomy . . . . .	34
Biochemistry . . . . .	37
Conjoined Basic Sciences Courses . . . . .	38
Microbiology . . . . .	39
Pathology . . . . .	42
Pharmacology . . . . .	43
Physiology and Biophysics . . . . .	45
School of Dentistry . . . . .	49
Doctor of Dental Surgery Program . . . . .	49
Orthodontics Program . . . . .	61
Dental Hygiene Program . . . . .	62
School of Medicine . . . . .	67
Program in Medical Technology . . . . .	81
Division of Physical Therapy . . . . .	87
School of Nursing . . . . .	92
School of Pharmacy . . . . .	102
Faculty and Staff . . . . .	112
Health Science Programs at West Virginia University . . . . .	132

# UNIVERSITY CALENDAR, 1978-79

## Summer, 1978

May 22, Monday	Registration, First Summer Session
May 23, Tuesday	First Classes
May 29, Monday	Memorial Day Recess
June 30, Friday	Last Classes
June 30, Friday	Registration, Second Summer Session
July 3, Monday	No Classes
July 4, Tuesday	Independence Day Recess
July 5, Wednesday	First Classes
August 11, Friday	Last Classes

## First Semester 1978-79

August 20, 21, Sunday and Monday	Freshman Orientation
August 21, 22, Monday and Tuesday	Registration
August 23, Wednesday	First Classes
September 4, Monday	Labor Day Recess
October 10, Tuesday	Faculty Assembly
October 13, Friday	Mid-Semester
October 20, Friday	Mid-Semester Reports Due
November 22, Wednesday, to November 26, Sunday, incl.	Thanksgiving Recess
December 11, Monday, to December 16, Saturday, incl.	Final Examinations
December 17, Sunday, to January 1, Monday, incl.	Christmas Recess

## Second Semester, 1978-79

January 2, 3, Tuesday and Wednesday	Registration
January 4, Thursday	First Classes
February 7, Wednesday (not a holiday)	West Virginia University Day
February 19, Monday	Washington's Birthday Recess
February 23, Friday	Mid-Semester
February 24, Saturday, to March 4, Sunday, incl.	Spring Recess
March 7, Wednesday	Mid-Semester Reports Due
April 10, Tuesday	Faculty Assembly
April 16, Monday	Easter Recess
April 27, Friday	Last Classes
April 30, Monday, to May 5, Saturday, incl.	Final Examinations
May 7, Monday	Grade Reports for All Graduates Due in Dean's Office
May 8, Tuesday	Dean's Reports for All Graduates Due in Office of Admissions and Records
May 12, Saturday	Alumni Day
May 13, Sunday	Commencement

*The academic year is divided into two semesters of approximately seventeen weeks and summer sessions.*



# West Virginia University

## Medical Center

West Virginia University Medical Center is more than a facility for educating health professionals—it stands as a symbol of the state of West Virginia's commitment to progress in the health sciences.

In the two decades since it opened, the Medical Center has provided West Virginia with many hundreds of physicians, dentists, nurses, pharmacists, and allied health workers. Before 1960, few of them could complete their education in the state. A two-year course in medicine was offered at WVU, but the students had to enroll in medical schools in other states for the last two years of clinical study. Pharmacy was one of the few health-related professions whose practitioners could earn a degree in West Virginia.

A new era began in 1951 when the Legislature authorized establishment of a Medical Center and levied a special tax on soft drinks for basic financing. The physical plant was planned as a single structure—a Basic Sciences Building and a Hospital under one roof—on a new campus north of the WVU Downtown Campus.

The Basic Sciences Building opened for instructional purposes in September, 1957. University Hospital admitted its first patients in 1960, as medical students reached their clinical years of education. Enrollment in Medical Center programs has since grown to more than 1,300. University Hospital, with a capacity of 445 beds, now records more than 160,000 admissions and outpatient visits a year.

The School of Dentistry, which awarded its first 23 degrees in 1961, now enrolls 225 students in its four-year program. Dental Hygiene, with an enrollment of 100, awarded its first degree in 1965.

The School of Medicine began in 1902 as the WVU College of Medicine, and at various times was affiliated with medical schools in Baltimore and Richmond for the final two years of work. The four-year program was inaugurated in 1960 and the first 15 M.D. degrees were awarded two years later. Enrollment now exceeds 335. Medical Technology has been a separate division since 1961 and Physical Therapy since 1970, with current enrollments of 55 and 32, respectively.

The School of Nursing enrolled its first students in 1960 in a four-year baccalaureate program, and added a graduate degree program in 1976. Enrollment exceeds 200.

Pharmacy began as a department of the old medical college in 1914 and became a separate unit in 1936. In 1960 the School of Pharmacy changed from a four-year to a five-year program including two years of pre-pharmacy work, and now enrolls some 215 students in the three professional years.

In 1972, WVU and the Charleston Area Medical Center—the state's largest hospital complex—began a partnership to develop medical and other health science programs. They were based in hospitals and other facilities already in place, but in 1977 a new \$6 million Medical Education Building was dedicated. It serves as the center of the clinical education programs.

Nonacademic policies and regulations affecting students are summarized in the *Student Handbook*. Every student is urged to obtain a copy of the *Student Handbook* from the Office of Student Educational Services, 205 Moore Hall.

The Charleston Division of the WVU Medical Center expands both the patient base and student capacity for WVU's health sciences educational programs. It serves students in dentistry, medicine, nursing, pharmacy, and allied health fields, in addition to offering specialty training.

In 1974 the WVU School of Medicine established a Wheeling Division in cooperation with Ohio Valley General Hospital and Wheeling Hospital. The program is overseen by a joint Wheeling Area Medical Education Committee and offers elective opportunities for fourth-year students and postgraduate specialty training.

At the Medical Center, as well as its Charleston Division and the School of Medicine's Wheeling Division, equal emphasis is given to teaching, research, and service—the pillars of sound health sciences education. Instruction is closely integrated among the health sciences, and there is a continuous search for improved ways of teaching.

## University Hospital

West Virginia University Hospital is a referral center where education of students and advancement of knowledge goes hand in hand with the best in medical care. It is the hub of the Medical Center complex, providing the training ground where students learn the science and art of caring for patients.

Services in some fifty specialties are provided for bed patients as well as through clinics where more than 2,000 patients are seen weekly. Emergency Room service is provided around the clock, with more than 38,000 visits recorded annually.

Patients come to University Hospital and its clinics from all parts of West Virginia. They find expertise, equipment, and experience sometimes not available at other West Virginia hospitals, in areas like transplant surgery, bladder pacemakers, linear accelerator radiation therapy, pediatric surgery, and cleft palate repair.

Clinic operations were streamlined in the past year to meet a growing public demand for efficient, quality, personalized health care. All internal medicine subspecialty clinics were merged into a new General Medicine Clinic, providing a multidisciplinary team to handle almost any health problem.

## Radiologic Technology

A two-year course for radiologic technologists is offered by the Department of Radiology at University Hospital. This course is covered by lectures, group discussions, anatomy and physiology, radiologic physics, radiographic techniques, radiation therapy, radioisotopes, medical terminology, nursing procedures, administration and professional ethics, as these pertain to the training of X-ray technologists. Subjects taken do not carry college credits. Practical experience is gained on assigned tours of duty under the supervision of staff members.

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee.

Students of the Radiologic Technology course provide their own lodging and meals.

Upon completion of the program, a certificate is awarded each student who is then eligible to take the American Registry Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Training, Department of Radiology, West Virginia University Hospital, Morgantown, WV 26506

## Coordinated Undergraduate Dietetics Program

The Coordinated Undergraduate Dietetics Program is jointly sponsored by the Department of Family Resources and University Hospital. It offers diverse learning opportunities through academic courses in various divisions of the University and the Medical Center, and clinical experience in hospitals and community agencies.

After successful completion of the four-year program the student is awarded the Bachelor of Science (B.S.) degree with a major in dietetics from the Department of Family Resources (College of Human Resources and Education). Clinical experience during the period of study enables the graduate to become a member of the American Dietetics Association without an additional internship period and to be eligible for the Registration Examination.

The student enters the program at the beginning of the junior year.

To qualify for application a candidate must have completed the following minimum prescribed courses or equivalent at the freshman and sophomore level from WVU or any accredited college or university with at least a 2.5 grade-point average: English Composition, 6 hours; Physical Education, 2 hours; Social Sciences, two courses, 6 hours; Speech Communication, 3 hours; Inorganic Chemistry, 8 hours; Organic Chemistry, 3-4 hours; Physiology, 4 hours; Mathematics 3 or equivalent, 3 hours; a course each in Food Science, Basic Nutrition, and Meal Management, 9 hours; and Family Resources, three courses, 9 hours.

Final acceptance in the Coordinated Undergraduate Dietetics Program is subject to approval by the Admission Committee. An interview with the committee is required. *Enrollment is limited and priority will be given to West Virginia residents.*

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental students. Facilities provided for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to a patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and a much needed service to several thousand patients annually.

## University Health Service

The University Health Service provides primary medical care for WVU students, faculty, and staff. Each regularly enrolled student pays a fee which covers medical consultation and treatment at the Health Service on the ground floor of University Hospital, or in the hospital's Emergency Room. It also covers limited payment for inpatient care at University Hospital. A voluntary insurance plan is available to students to cover the cost of inpatient and outpatient services beyond primary care, and students are strongly advised to obtain it. Details are available in a Health Service brochure.

## Library

The Medical Center Library serves the students, faculty, and staff of the four schools and University Hospital. In addition, its services are available to



health professionals throughout West Virginia and to the general public when needed.

The library in the Basic Sciences Building contains approximately 110,000 bound volumes. More than 2,300 domestic and foreign periodicals are currently received.

The Medical Center Library and the University Library maintain an active interlibrary loan service. Material not in either library may be borrowed through loan from libraries in other cities.

The library is open, except on holidays, from 8:00 a.m. to midnight, Monday through Friday; from 9:00 a.m. to 5:00 p.m., Saturday; and from 2:00 p.m. to midnight, Sunday. Changes in scheduled hours are posted in advance.

## Admissions

### Admission to Medical Center Programs

Applicants for admission to any of the schools of the WVU Medical Center should write to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, who will furnish official blanks upon which formal application must be made.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

When requesting an application by letter for any of the Medical Center programs, the permanent home address must be given.

A \$10.00 application fee is required and must accompany the applications of all but Dental Hygiene students, who pay no application fee.

Any applicant who is refused admission, or who fails to enroll after acceptance, must re-apply in the regular manner if consideration for a subsequent year is desired.

Those applicants accepted for admission to any of the programs of the WVU Medical Center, except the Division of Dental Hygiene and out-of-state applicants to the School of Dentistry, are required to deposit \$50.00 before acceptance becomes official. Applicants accepted to the Division of Dental Hygiene deposit \$40.00, and out-of-state applicants accepted to the School of Dentistry deposit \$100. If the applicant enrolls in the program of the applicant's choice, the deposit is applied to first semester tuition.

If an application for admission to the School of Medicine is withdrawn after the applicant has been offered a place and has submitted a deposit, such deposit may be refunded any time before March 30 of the year in which enrollment is anticipated, but will not be refunded after this date. Deposits submitted to all other programs are nonrefundable.

It is required that during the first semester of the first year all WVU Medical Center students must complete certain prescribed immunization and diagnostic procedures.

### Admission to WVU

Students may be considered for admission to WVU on the basis of graduation and transcripts from accredited high schools. High school graduates are

required to present credit for 4 units of English and 1 unit of algebra. In addition, the health sciences require 1 unit of geometry.

Special admissions regulations for individual Medical Center schools appear in subsequent pages of this *Catalog*.

All students are required to take the American College Testing (ACT) Program tests and have the report of scores sent to WVU. This test is not used for admission, but for placement, and no other test may be substituted for it.

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools or from the College Scholarship Service, or the WVU Financial Aid Office. Submit only forms dated for the current academic year.

("Your Guide to Financial Aid—West Virginia University" is available at the WVU Financial Aid offices, in Mountainlair, Downtown Campus, and 104 Basic Sciences Building, Medical Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.)

West Virginia high school students should obtain applications for admission from their high schools. Out-of-state students may write the WVU Office of Admissions and Records and request an application form. Applicants should prepare their part of the application and then return it to their school. The school then will send the completed application and transcript of the student's high school grades directly to the WVU Office of Admissions and Records.

Students should apply for admission when they have met these requirements—

#### *West Virginia Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above), the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.0 of a possible 4.0 (C or above), the student should apply as soon as possible after beginning the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the confidential report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the General Educational Development (GED) examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

#### *Out-of-State Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 3.0 of a possible 4.0 (B or above), the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above), the student should apply as soon as possible after the beginning of the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the confidential report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and

Records. If applying on the basis of the GED examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

## Admission of Transfer Students

Applicants for transfer from another college or university should submit the following to the Office of Admissions and Records:

1. A complete application for undergraduate admission.
2. A certified transcript of all college work taken to date, including a statement of good standing. A certified statement covering subjects subsequently taken should be sent as soon as it is available.
3. Catalog pages describing all subjects which have or will have been completed. The applicant's name should be written on each page and each subject indicated by a check mark in the margin. Complete catalogs should not be sent. (Not necessary from West Virginia colleges.)

The cumulative average of all work attempted before transfer must be at least C.

Credits and grades earned for all baccalaureate level courses at any baccalaureate degree-granting institution in the West Virginia state system of higher education and up to 72 hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia state system shall be transferable toward a bachelor's degree. (See also "Requirements As to Residence," page 22.)

Credits (though not grades) are transferable from institutions outside the West Virginia state system for courses carrying a grade of C or higher. A grade of D on the first of sequence courses may be transferred if the second course grade is C or higher.

Credits from two-year community colleges and junior colleges outside the West Virginia state system are limited to 72 hours of lower-division courses. These colleges must be accredited by the North Central Association of Colleges and Schools or another regional accrediting association.

The transfer of credits does not exempt the student from satisfying all the requirements for the student's degree program at WVU.

All transcripts must be in the Office of Admissions and Records three weeks in advance of registration.

Evaluation of transcripts for transfer of credit is furnished only after receipt of complete official transcripts and application for admission.

Transfer students generally are admitted only after they complete one full year at another institution. Applicants who have less than one full year of college work elsewhere must submit both their college and high school records. Students who have successfully completed 6 hours or less at another accredited institution will apply as freshmen.

### Intrauniversity Transfers

Students transferring from Potomac State College of WVU shall be considered intrauniversity transfers. All records made at Potomac State College are part of the student's WVU record, but no more than 72 hours may be applied toward the baccalaureate degree.

If a change of major is involved, the transferee should consult the college, school, or department to which the student is transferring concerning requirements for the new major.



## Admission of Special Students

Persons not desiring to become candidates for a degree may, by special permission, be admitted as special students. Such students are subject in all respects to the usual rules relating to registration and scholarship. Admission to any class is subject to the approval of the instructor in charge.

Students who do not plan to follow a degree program at WVU should submit only a statement of good standing from the last college attended.

## Admission of Post-Baccalaureate Students

Students possessing one or more earned degrees from an approved college or university and desiring to enroll for undergraduate credit may be admitted as post-baccalaureate students. Students admitted in this category would not be working toward a graduate degree and credit earned while under this classification would be limited to undergraduate credit. Students admitted as post-baccalaureate, since they are limited to undergraduate credit, would be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an official transcript from the institution granting their latest degree.

## Admission of Foreign Students

Foreign students wishing to enroll at WVU must comply with the academic requirements for admission which have already been stated and with certain additional academic and nonacademic requirements as follows.

### Early Inquiry and Application

Foreign applicants should forward a letter of inquiry one year before the intended time of beginning study in the United States. Foreign students admitted are expected on campus at the beginning of July for a six-week period of orientation and intensive study of English. Accordingly, all the papers on which admission is based must have been received at the University at the very latest by April 1, to allow sufficient time for their processing and the communication of the decision to the student, as well as for the student to make arrangements for passport and visa clearance and other necessary details.

Foreign students should make all arrangements for their financial obligations to WVU for their entire stay in the United States before leaving their countries.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

### English Proficiency

No person should undertake graduate or undergraduate study at WVU who is not competent in the use of English. All foreign applicants the language of whose family and schooling was other than English must present a satisfactory score on the "Test of English As a Foreign Language" (TOEFL). (Applicants for graduate study must present a composite score of at least 500 on the TOEFL.)

Information on locations of TOEFL testing centers, dates of testing, and application forms is available from the Educational Testing Service, Princeton, NJ 08540 USA. Tests are normally given four times each year. It usually requires about one month to score and report individual test results. Registration for the TOEFL examination closes five weeks before the testing date.

### Credentials

Complete and original official records of all studies undertaken by an applicant at any institution attended (secondary school, college, university, technical school, professional school, etc.), must be provided at time of application for admission to WVU. Records may be copies, provided they are officially stamped. The records must show evidence of the study the applicant has done in the field of intended study at WVU.

Such records should include: (1) complete dates of attendance; (2) identification of individual subjects; (3) total number of hours in each class per week; (4) total number of weeks each class has in session; (5) final grade in each subject, for each year; (6) actual credits earned for each subject; (7) class, division, or rank achieved; (8) identification of individual; (9) description and clarification of each institution grading system; and (10) certification, and date, of degree or awards achieved, if not a part of the mark sheet or transcript. If any of this information cannot be supplied, an official explanatory statement from the school should be submitted. (All documents must be in English.)

All documents should be forwarded directly from the registrar or other authorized official of the school to the WVU Office of Admissions and Records.

If an applicant is currently enrolled in a school, tentative admission may be granted on the basis of an incomplete record which indicates the applicant will unquestionably meet the admission standards of WVU. Final admission, however, cannot be approved until the complete record has been received and evaluated.

### Foreign Students Transferring Within the United States

Foreign students applying to transfer from schools within the United States are advised that they will not be admitted and permitted to register at WVU unless they have complied well in advance with all requirements of the United States Immigration and Naturalization Service (INS).

The school the student was last authorized to attend must have completed and signed the INS form I-538. This, together with a valid I-20 form received from WVU, must have been submitted to the INS office having jurisdiction over the school the student was last authorized to attend. If the student is not now attending that school, a letter must be added explaining in detail why.

If the INS approves the transfer, this approval will be stamped on the student's I-94. The student must then immediately notify WVU that the transfer has been approved, either by sending an INS statement of transfer approval, or simply by reporting the fact that the approval appears on the I-94.

Only when these procedures have been completed will WVU undertake to admit and register the student. No student should move to Morgantown without having received this assurance of admission from WVU.

### Admission of Veterans

Veterans may be admitted to WVU with less than the minimum admission requirements necessary for other, nonveteran applicants.

Information regarding educational opportunities made possible at the University through provisions of the Veterans Readjustment Benefits Act of 1966 – G.I. Bill (Public Law 358), the Vocational Rehabilitation Program of the Veterans Administration (Public Law 16), and the War Orphan's Educational Assistance Act of 1956 (Public Law 634) may be obtained from the Veterans Counselor by personal conference at his office in Mountainlair or by mail. An amendment to Public Law 634, enacted in 1964, provides benefits to many dependents of 100 percent disabled veterans.

Veterans having at least one continuous year of military service may be exempted from the physical education general program. No scholastic credit is given. Proof of military service should be presented to the Dean of Admissions and Records.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## Readmission

Undergraduate students who leave the University for at least one complete semester are required to submit an application for readmission to the Dean of Admissions and Records.

Students who have been suspended from the University must have written approval from the dean of the school or college from which the student was suspended.

Approval in writing must be secured in advance to elect courses offered elsewhere. A cumulative average of C is required in order to obtain such approval. Credit will be accepted for transfer for courses carrying a grade of C or higher when the conditions indicated above have been met.

Students wishing to change their major upon readmission must have permission from their previous dean and the dean of the college to which they wish to transfer.

## Fees and Expenses

All West Virginia University fees are subject to change without notice.

All fees are due and payable at the Comptroller's desk in the Coliseum on the days of registration. Medical Center students pay their fees at the Comptroller's Office, Basic Sciences Building. Students must pay fees before registration is accepted and class tickets are released. Completion of arrangements with the Comptroller's Office for payment from University payroll checks, officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair. Medical Center students pay at the Comptroller's Office, Basic Sciences Building.

All students are expected to register on days set apart for registration at the beginning of each semester or session of the University.

No student will be permitted to register at the University after the twelfth day of a semester or the fourth calendar day of the summer session or a summer term. Days are counted from the first day of registration.



# ESTIMATED EXPENSES FOR MEDICAL CENTER PROGRAMS (First Semester) [Subject to Change]

Tuition and registration are the same for both semesters. Some expenses, such as fees, instruments, and book costs will be different for the Second Semester.

School or Division	Tuition and Registration Fees		Fees*	Instruments	Lab Coats, Uniforms, etc.	Books	TOTAL	
	Resident	Nonresident					Resident	Nonresident
<b>Dental Hygiene</b>								
Freshman	\$202.50	\$577.50	\$25.00	\$ 80.00	\$ 10.00	\$100.00	\$ 312.50	\$ 687.50
Sophomore	202.50	577.50	5.00	100.00	150.00	110.00	567.50	942.50
Junior	202.50	577.50	5.00	50.00	60.00	25.00	467.50	842.50
Senior	202.50	577.50					342.50	717.50
<b>Dentistry</b>								
First Year	264.50	682.50	38.00	1,725.00	55.00	305.00	2,387.50	2,805.50
Summer	224.90	682.50	9.00	1,300.00		75.00	1,612.90	2,066.50
Second Year	264.50	682.50	38.00	480.00		241.00	1,023.50	1,441.50
Summer	244.90	552.90	10.00	150.00			322.90	682.90
Third Year	264.50	682.50	14.00			85.00	363.50	781.50
Summer	30.05	90.05	10.00				40.05	100.05
Fourth Year	264.50	682.50	20.00				284.50	702.50
<b>Medical Technology</b>								
Junior	202.50	577.50	35.00		37.00	171.00	445.50	820.50
Summer	121.80	341.80			130.00	82.50	334.30	554.30
Senior	202.50	577.50					202.50	577.50
<b>Medicine</b>								
First Year	264.50	682.50	45.00	75.00	30.00	160.00	574.50	992.50
Second Year	264.50	682.50	55.00	230.00	30.00	125.00	704.50	1,122.50
Third Year	264.50	682.50			15.00	120.00	399.50	817.50
Fourth Year	264.50	682.50			15.00	120.00	399.50	817.50
<b>Nursing</b>								
First Year	202.50	577.50	5.00		83.00	115.00	405.50	780.50
Sophomore	120.90	450.90	5.00			31.00	156.90	486.90
Summer	202.50	577.50	5.00			77.00	284.50	659.50
Junior	202.50	577.50	5.00			83.00	290.50	665.50
<b>Pharmacy</b>								
First Year	227.50	727.50						
Second Year	227.50	727.50						
Third Year	227.50	727.50						
Fourth Year	227.50	727.50						
Summer	227.50	727.50						
Fifth Year	227.50	727.50						
<b>Physical Therapy</b>								
First Year	202.50	577.50	5.00	15.00		180.00	442.50	817.50
Summer	202.50	577.50	5.00		40.00	160.00	407.50	782.50
Senior	45.00	210.00	10.00		40.00		55.00	220.00

\*Fees—Includes lab fees, microscope rental, or graduation fee.

## TUITION & REGISTRATION FEES BREAKDOWN

Dent. Hy., Med. Tech., Nursing & Phys. Ther.	Resident or Nonresident	Tuition	Registration	Higher Education Resources	Institutional Activity	Mountainair Construction	TOTAL
Dent. Hy., Med. Tech., Nursing & Phys. Ther.	RESIDENT	\$ 55.00	\$ 50.00		\$77.50	\$20.00	\$202.50
	NONRESIDENT	230.00	250.00		77.50	20.00	577.50
Pharmacy & Graduate	RESIDENT	\$5.06	50.00	\$ 25.00	77.50	20.00	227.50
	NONRESIDENT	230.00	250.00	150.00	77.50	20.00	727.50
Dentistry & Medicine	RESIDENT	117.00	50.00		77.50	20.00	264.50
	NONRESIDENT	335.00	250.00		77.50	20.00	682.50

## TUITION PER SEMESTER HOUR—PART-TIME & SUMMER (Under 9 hr.)

Dental Hygiene, Medical Technology, Nursing & Physical Therapy	\$15.00—per Credit Hour—	plus Special Fees
Pharmacy & Graduate	\$22.00—per Credit Hour—	
Dentistry & Medicine	\$30.90 6 hr. & up per session.	
SEMESTER: \$21.50 per semester SPECIAL FEES { SUMMER: \$8.05 under 6 hr. — \$30.90 6 hr. & up per session.		

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$10.00.

Students registering pay the fees shown in the fees table, plus special fees and deposits as required.

No degree will be conferred upon any candidate before payment of all tuition, fees, and other indebtedness to any unit of the University.

Persons not registered as University students and who are not members of its administrative or teaching staffs shall not be admitted to regular attendance in University classes.

Special Fees

Application for Admission (Law and Graduate School)	\$10.00
Change in Registration (after eighth day)	1.00
Diploma Replacement	5.00
Examination for Advanced Standing	3.00
Examination for Entrance Credit, per unit	1.00
Examination of Candidate for Graduate Degree	1.00
(For graduate students not otherwise enrolled at time of final examination.)	
General Educational Development Tests (high school level)	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduation	10.00
(Payable by all students at the beginning of the semester or term in which they expect to receive their degrees.)	
Late Registration (nonrefundable)	10.00
(Not charged to full-time students who complete registration during the regular registration days set forth in the University Calendar. Not charged to part-time students who complete registration by the close of office hours on the eighth day following the beginning of General Registration.)	
Reinstatement of Student Dropped from the Rolls	3.00
Student Identification Card Replacement	1.00
Student's Record Fee	1.00
(One transcript of a student's record is furnished by the Dean of Admissions and Records without charge. This fee is charged for furnishing an additional transcript.)	

Summer Fees

Tuition, per semester hour	Resident	Nonresident
Undergraduate students	\$10.00	\$51.00
Professional and Graduate students	15.00	70.00
Dentistry and Medicine students	22.00	82.00
Daily Athenaeum Fee*	.55	.55
Health, Counseling, and Program Services Fee	11.60	11.60
Mountainlair Construction Fee per 6-week summer term or any portion thereof*	7.50	7.50
Student Educational Services Fee	5.65	5.65
Transportation Fee	5.60	5.60

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)

## Classification of Students (Full-Time and Part-Time)

A *full-time professional or graduate student* is one who is registered for 9 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during the summer. A full-time student receives an identification card which entitles the student to admission to all athletic events. A full-time student during the regular academic year and all students during the summer sessions are entitled to free medical consultation and advice from the University physician. A moderate charge is made for room calls, X-rays, special laboratory tests, drugs furnished by the University Pharmacy, minor operations, treatment of fractures and dislocations, and intravenous treatment.

A *full-time undergraduate student* is one who is registered for 12 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during a 6-week summer session. A full-time student during the regular academic year receives an identification card which entitles the student to admission to all athletic events. A full-time student during the regular academic year and all students during the summer sessions are entitled to free medical consultation and advice from the University physician. A moderate charge is made for room calls, X-rays, special laboratory tests, drugs furnished by the University Pharmacy, minor operations, treatment of fractures and dislocations, and intravenous treatment.

For fee assessment purposes, a *part-time professional or graduate student* is one who is registered for fewer than 9 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

A *part-time undergraduate student* is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

## Fees for Off-Campus Courses

Fees for credit hours for off-campus students are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee or the Mountainlair Construction Fee.

## Laboratory Fees

Consult specific department sections of this *Catalog* concerning nonrefundable deposits and microscope rental fee.

## Service Charge on Returned Checks

A service charge of 5 percent of the amount of each check returned unpaid by the bank upon which it is drawn shall be collected unless the student can obtain an admission of error from the bank.

If the check returned by the bank was in payment of University and registration fees, the Comptroller's Office shall declare the fees unpaid and registration cancelled if the check has not been redeemed within three days from date of written notice. In such a case the student may be reinstated upon redemption of the check, payment of the 5 percent service charge, Reinstatement Fee of \$3.00, and Late Payment Fee of \$10.00.



Refunding of Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Comptroller evidence of eligibility for a refund.

To withdraw officially, a student must apply to the Dean of Admissions and Records for permission. Semester fees will be returned in accordance with the following schedule:

First refund period ending on the twelfth day following the beginning of general registration.	} All activity fees chargeable to Special Services and all other semester fees less \$2.50. (Under no circumstances is the amount retained less than \$2.50.)
Second refund period ending on the fifth Friday following the beginning of general registration.	} 70% of all refundable fees.
Last refund period ending on the eighth Friday following the beginning of general registration.	} 40% of all refundable fees.

The second Friday following the beginning of general registration for the summer session is the end of the refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit, if the call comes before the end of the first three-fourths of the semester, and that full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however, that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

Identification Card

An identification card is issued to each full-time student upon paying full fees. It entitles the owner admission to certain University athletic events, various activities of student government, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

Residential Status for Admission and Fee Purposes

The West Virginia Board of Regents has adopted regulations governing the classification of students as residents or nonresidents for admission and fee purposes at all institutions under its jurisdiction.

Students enrolling in WVU shall be classified as resident or nonresident for admission, tuition, and fee purposes by the Dean of Admissions and Records. The decision shall be based upon information furnished by the student and all other relevant information. The Dean of Admissions and Records is authorized to require such written documents, affidavits, verifications, or other evidence as are deemed necessary to establish the domicile of a student. The burden of establishing residency for tuition and fee purposes is upon the student.

If there is a question as to residence, the matter must be brought to the attention of the Dean of Admissions and Records and passed upon at least two weeks before registration and payment of tuition and fees. Any student found to have made a false or misleading statement concerning the student's residence shall be subject to disciplinary action and will be charged the nonresident fees for each session theretofore attended.

#### Residence Determined by Domicile

Domicile within the state means adoption of the state as a fixed permanent home and involves personal presence within the state with no intent on the part of the person to return to another state or country. West Virginia domicile may be established upon the completion of at least twelve months of continued residence within the state before the date of registration, provided that such twelve months residency is not primarily for the purpose of attendance at any institution of learning in West Virginia.

Establishment of West Virginia domicile with less than twelve months residence before the date of registration must be supported by proof of positive and unequivocal action, such as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established.

#### Minors

Minors are defined by the West Virginia Code (2-2-10) as persons under 18 years of age. The residence of a minor shall follow that of the parents at all times, except in extremely rare cases where emancipation can be proved beyond question. The residence of the father, or the residence of the mother if the father is deceased, is the residence of the unmarried or unemancipated minor. If the father and the mother have separate places of residence, the minor takes the residence of the parent with whom the minor lives or to whom the minor has been assigned by court order. The parents of a minor will be considered residents of West Virginia if their domicile is within the state.

A minor student who is properly admitted to an institution as a resident student shall retain that classification as long as the student enrolls each successive semester.

## Emancipated Minor

An emancipated minor may be considered as an adult in determining residence, provided satisfactory evidence is presented that neither of the parents, if living, contribute to the minor's support nor claim the minor as a dependent for federal or state income tax purposes.

In the event that the fact of emancipation is established, the emancipated minor assumes all of the responsibilities of an adult to establish residence for tuition and fee purposes. Proof must be provided that emancipation was not achieved principally for the purpose of establishing residence for attendance at an institution of higher education.

## Students 18 Years of Age or Over

A student 18 years of age or over may be classified as a resident if: (1) the parents were domiciled in the state at the time the student reached majority and such student has not acquired a domicile in another state, or (2) while an adult the student has established a bona fide domicile in West Virginia. Bona fide domicile in West Virginia means that the student must not be in the state primarily to attend an educational institution and the student must be in the state for purposes other than to attempt to qualify for resident status.

Any nonresident student who reaches the age of 18 years while a student at any educational institution in West Virginia does not by virtue of such fact alone attain residence in this state for admission or tuition and fee payment purposes.

A student who is properly classified as a resident at the time of attaining the age of 18 shall continue to be classified as a resident as long as the student enrolls each successive semester and does not establish a domicile, or legal residence, in another state.

## Change of Residence

An adult student who has been classified as an out-of-state resident and who seeks resident status in West Virginia must assume the burden of proving conclusively that the student has established domicile in West Virginia with the intention of making the student's permanent home in this state. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements but also by a person's actions. The Dean of Admissions and Records in making his determination shall consider such actions as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established. Factors militating against a change in residence classification may include such considerations as the fact that the student is not self-supporting, that the student is carried as a dependent on the parents' federal or state income tax returns or the parents' health insurance policy, and that the student customarily does not remain in the state when school is not in session.



## Marriage

The residence of a married person is determined by the same rules of domicile which would apply if he or she were not married.

## Military

An individual who is on active military service or an employee of the federal government may be classified as a resident for the purpose of payment of tuition and fees provided the individual established a domicile in West Virginia before entrance into federal service, that the individual entered the federal service from West Virginia, and that the individual has at no time while in federal service claimed, or established, a domicile in another state. Sworn statements attesting to these conditions may be required. The wife and dependent children of such individuals also shall be classified as residents of the state of West Virginia for tuition and fee purposes. Persons assigned to full-time active military service and residing in West Virginia may be classified as in-state residents for tuition and fee purposes after twelve months of continuous location in the state.

## Aliens

An alien in the United States on a resident visa, or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia may be eligible for resident classification, provided the alien is in the state for purposes other than to attempt to qualify for residency status as a student.

## Appeal Process

The decisions of the Dean of Admissions and Records may be appealed to the President of WVU. The President may establish such committees and procedures as he determines necessary for the processing of appeals. The decision of the President may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board of Regents.

# Regulations Affecting Degrees

Candidates for degrees are eligible for graduation when they complete the requirements in the college or school in which they are registered which were in effect at the time of their first registration in that college or school, provided they graduate within a period of seven years from the time of their first registration. Students who do not complete the requirements for graduation within seven years from their first registration must meet *all the conditions* of a later *Catalog* – one that will be no more than seven years old by the time they graduate.

If there are major changes in the *Undergraduate Catalog* during the student's course of study, the student does not have to abide by them unless they are promulgated by the Board of Regents, or by local, state, or federal law. However, by choice and with the approval of adviser and the Dean, a student may meet *all the conditions* of a later *Undergraduate Catalog* than that under which the student first registered in that college or school.

University policy provides that in view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of WVU the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds

that the student is unfit to meet the qualifications and responsibilities of the profession.

All degrees are conferred by the Board of Regents upon recommendation of the faculties of the various colleges and schools. Degrees are granted at the close of the semester or summer session in which the students complete their work.

## Baccalaureate Degrees

### Credits Required

In addition to the University requirements listed in this *Catalog*, each baccalaureate degree is conditional upon the completion of a specified number of semester hours of credit, as determined by the student's degree program requirements. Students must, therefore, familiarize themselves with their school and degree program requirements, as given in subsequent pages of this *Catalog*.

### Physical Education

Two hours of physical education, to be taken during the first year in residence, are required for graduation, except in the case of students entering with advanced standing amounting to 58 semester hours or more. (See "General Program" in the School of Physical Education section of the *Undergraduate Catalog*.) The University Health Service will determine whether students are physically qualified for required physical education courses and for active participation in other University activities.

### University Core Curriculum

I. Two semesters of English Composition and Rhetoric (English 1 and 2) are required of all candidates for the bachelor's degree in all colleges and schools of the University, unless part or all of the requirement for certain students of superior achievement is waived under regulations prevailing at the time of admission. Such students will be informed of their eligibility by the Coordinator of Writing Programs in English.

II. Remedial work in mathematics to cover the deficiency if the student, upon entering the University, lacks proficiency in mathematics equal to that normally attained in two years of high school mathematics.

III. Twelve\* credit hours of work in selected approved courses in each of the three following areas, including courses in at least two subjects in each group:

#### Group A

1. Art
2. English (exclusive of English 1 and 2)
3. Humanities
4. Languages
5. Music
6. Philosophy
7. Religious Studies
8. Selected Multidisciplinary Studies
9. Speech Communication
10. Theatre

#### Group B

1. Economics
2. Forestry 140
3. Geography
4. History
5. Minerals 97
6. Political Science
7. Psychology
8. Selected Multidisciplinary Studies
9. Social Science
10. Sociology/Anthropology

\*Two 4-credit courses and one 3-credit course may be substituted in lieu of 12 credit hours.

### *Group C*

- |                     |   |
|---------------------|---|
| 1. Bacteriology     | 9. Mathematics                            |
| 2. Biology          | 10. Nutrition                             |
| 3. Chemistry        | 11. Physical Science                      |
| 4. Computer Science | 12. Physics/Astronomy                     |
| 5. Entomology       | 13. Physiology                            |
| 6. Engineering 111  | 14. Selected Multidisciplinary<br>Studies |
| 7. Genetics         | 15. Statistics                            |
| 8. Geology          |   |

The determination as to whether ROTC courses will be counted toward fulfillment of the Core Curriculum or will be counted as free electives is the prerogative of the department chairperson or dean of the appropriate college or school. This is in keeping with the Board of Regents' orders effective at the end of the first semester of the 1967-68 academic year which stipulated that "each academic division of the University must allow at least 8 hours of credit toward graduation for courses in Military Science (ROTC) and Air Force Aerospace Studies (ROTC), if earned during the first two years of enrollment . . . A student electing to take Military Science (ROTC) or Air Force Aerospace Studies (ROTC) should consult the student's department chairperson or dean of the student's college of school for determination as to how the 8 hours of academic credit will be credited toward fulfilling graduation requirements."

### **Branch, Community, and Junior Colleges**

Seventy-two hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges may not exceed 72 hours. Transfer credit from community colleges and junior colleges is normally limited to lower-division courses.

### **Requirements As to Residence**

A student who comes to WVU from another college or university should transfer not later than the beginning of the third year. In no case will a student who matriculates in WVU later than October 1 in any year be permitted to receive a degree at the next Commencement.

In special cases, students who desire to leave WVU at the close of their third year to enter another institution for the purpose of taking a combined course leading to two degrees or of preparing for graduate study, upon application beforehand to the Committee on Academic Standards of the college or school in which they are registered, may be permitted to do the work of the fourth year, or a part thereof, at such other institution and to receive the bachelor's degree from WVU upon presentation of the proper credits.

The transfer student whose undergraduate work has been altogether in institutions within the West Virginia state system of higher education must complete either the last 30 hours of work, or a minimum of 36 hours including 16 of the last 32 hours in residence. Other transfer students must complete either a total of at least 90 hours or the last 30 hours in residence at WVU. The transfer student may be required to earn up to 15 hours in the major field in residence regardless of the number of hours and the nature of the courses transferred.



## Work Done Out of Residence

It is WVU policy to discourage the taking of regular residence courses in absentia. In the case of courses begun at WVU and not completed because of illness or for other acceptable reasons, however, permission to complete the work in absentia under the direction of regular WVU instructors may be granted by the Committee on Academic Standards of the college or school concerned; but in such case credit should be given only upon a report of a grade of no less than C on final examination. This regulation does not apply to WVU off-campus courses.

After a student enrolls on the Morgantown campus, the student must obtain advance approval in writing from the student's adviser and dean and the Dean of Admissions and Records to obtain credit toward a degree for courses offered at other institutions and undergraduate branches of WVU. An overall average of C is required on all work completed at WVU in order to obtain such approval. Transfer credit from schools not affiliated with WVU will be accepted for courses carrying a grade of C or higher when conditions indicated above have been met.

## Substitution for Required Courses

A student who desires to substitute another course for any prescribed in the student's curriculum or required for the degree toward which the student is working must obtain permission for such substitution from the Committee on Academic Standards in the student's college or school.

## Advanced Placement Credit

West Virginia University encourages students to work to their full capacity and to advance as rapidly as appropriate in their academic work. A number of opportunities are open to both qualified high school juniors and seniors, as well as to adults returning to school after an interval of work or military experience, to demonstrate competence beyond that normally associated with graduation from high school.

High school students who take college-level subjects offered in their schools in cooperation with the College Entrance Examination Board (CEEB) Advanced Placement Program should take the appropriate three-hour examinations administered by the Advanced Placement Service and have the scores sent to WVU. Credit for corresponding WVU courses will be given for high achievement on these tests.

Applicants for admission to the University, especially those who have gained a significant level of maturity through their life experiences, may gain college credit for their educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. Policy of the West Virginia Board of Regents allows University credit to be awarded for successful completion of any or all of the CLEP Subject Examinations, as well as allowing up to 34 hours of general education credit for successful performance on the CLEP General Examinations. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek advanced standing via the CLEP program. Interested applicants may write the Dean of Admissions and Records for further information regarding the CLEP program and WVU credit.

Advanced placement also may be granted for specific military experience. Returning veterans should consult the Dean of Admissions and Records and the WVU Veterans Counselor for details.

After admission to WVU, students may elect to take examinations demonstrating their competence in particular course work. Credit or advanced placement is given for satisfactory completion of the tests. Students interested in challenging courses by examination should consult their advisers for procedures and details.

#### Credit by Examination

Students actively enrolled in WVU may receive credit for courses by demonstrating competency in the content covered by a particular course. The department responsible for administering the course will determine the evaluation tools. Where skill and cognitive abilities are components of the course, both will be evaluated. Credit will be given if a satisfactory degree of competency is demonstrated.

A college, school, or department may require students desiring such credit to prepare a self-evaluation statement determining the degree of competency they possess and the methods by which it was achieved.

Students interested in receiving credit for a course by examination should consult the college or school in which the course is offered for procedures and details.

#### Credit for Correspondence Work

Credit up to a maximum of 30 semester hours for work completed by correspondence in nonlaboratory courses will be accepted by WVU when such work is given by accredited colleges or universities that accept work for credit toward their own degrees and whose residence work is accepted by WVU.

#### Visitors

Full-time University students may attend classes as visitors, provided they obtain the written permission of their advisers and of the instructors in classes they desire to visit. Members of the administrative or teaching staffs, or other regular employees of the University, may attend classes as visitors provided they obtain written permission of the chairperson of their departments and of the instructors in the classes which they desire to visit.

No credit is given for work in such classes. Such persons may not obtain credit by advanced standing examinations in courses attended as visitors.

#### Auditors

Students may enroll in courses without working for grade or for credit by registering as auditors and by paying full fees. Change in status from audit to credit or from credit to audit may be made during the registration period. Attendance requirements for auditors shall be determined by the instructor of the course being audited. It is the prerogative of the instructor to strike the name of any auditor from grade report forms and to instruct the Office of Admissions and Records to withdraw the auditor from the class, if attendance requirements are not met.

#### Summer Session

There are two summer sessions, each of six weeks duration. The first session begins approximately the middle of May and ends June 30. The second session begins July 1, and ends the second week of August. Requirements for admission and character of the work offered are the same for the summer sessions as for the regular academic year.

Credit may be obtained toward the bachelor's, master's, and doctorate. Offerings are varied from summer to summer so that students may complete work for the master's degree by attending summer sessions only.

For complete information, see the *WVU Summer Session Bulletin*.

## Grade-Point Average

All academic units of the University require minimum standards of scholastic quality. Grade points are computed only on grades earned at WVU and at other institutions in the West Virginia state system of higher education. To be eligible for graduation, a student must have a grade-point average of 2.0 (C) or higher on all work for which the student receives grades (except W, WU, and P). In addition, specific degree programs may require minimum grades of C, or in some cases higher than C, in specific courses or portions of the baccalaureate program.

It is the student's responsibility to keep informed of the student's grade-point standing. This information may be obtained at any time from the dean of the college or school in which the student is registered.

Seventy-two hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges may not exceed 72 hours. Transfer credit from community colleges and junior colleges is normally limited to lower-division courses.

## Cum Laude and Magna Cum Laude Graduates

The University recognizes distinguished academic achievement by awarding initial baccalaureate degrees *Cum Laude* and *Magna Cum Laude* to qualified students. The following regulations govern these awards:

1. Grade-point averages for graduation *Cum Laude* or *Magna Cum Laude* shall be computed by either:

- (a) Starting with the student's penultimate semester or summer session and continuing in reverse chronological order until at least 48 semester hours, excluding credits earned with a grade of P, have been counted. If, in order to total the required number of hours it is necessary to include any part of a semester or summer session, the work of the whole semester shall be included.
- (b) The cumulative grade-point average in all work completed at WVU through the student's penultimate semester or summer session provided the total work completed is 49 semester hours or more.

2. Students who transferred to WVU from institutions within the West Virginia state system of higher education on or after January 2, 1972, may be eligible for graduation with honors based on either computational system stated above.

3. Students who transfer to WVU from institutions not within the West Virginia state system of higher education, may be eligible for graduation with honors from WVU provided they meet the requirements of paragraph 1(b) above.

4. Subject to the above conditions, all candidates for a baccalaureate degree whose grade-point average in the work covered by either 1(a) or 1(b) above, is



3.6 or higher, shall be graduated *Magna Cum Laude*. All those whose average is lower than 3.6 but is 3.3 or higher shall be graduated *Cum Laude*.

5. Fitting recognition of graduation *Cum Laude* or *Magna Cum Laude* shall be made on the candidate's diploma and in the Commencement program

## Examinations and Reports

### Courses

As a rule courses extend through one semester only, although some are of a year's duration. No credit will be given for less than an entire course except by special order of the Committee on Academic Standards. Grades given at the end of the first semester in courses extending throughout the year are merely indicative of the quality of work done by the student to that point and do not give credit for the part of the course so far completed. Such first-semester grades may be considered in determining the final grade, however.

Summer session courses carry the same credit value as courses offered in the regular semesters.

### Evaluation of Student Progress

Measurement and evaluation of learning, consistent with the objectives of the course, provide opportunity for the student and the teacher to evaluate progress through a variety of methods. Evaluation by final examination alone is discouraged.

Students are responsible for all material presented or assigned in scheduled instructional sections. Failure to complete all assigned work may result in a report of I or a grade of F at the discretion of the instructor.

Final examinations are held during the last week of each semester of the academic year and during the last two days of each summer session. A listing in the *Schedule of Courses* each semester sets the time for final examinations.

The only tests permitted during the week of classes preceding finals will be in evening classes, practical laboratory tests, make-up examinations, and regularly scheduled short quizzes.

### Absence from Examinations

The student is required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor shall count the examination as zero and report the final grade as F. If, in the opinion of the instructor, absence of the student was for satisfactory reason, the grade of I may be reported.

A student who has been absent because of illness, authorized University activities, or other reasons approved by the student's dean, has the opportunity to make up regularly scheduled examinations.

### Grade Reports

In the seventh week of classes of each semester, instructors in all undergraduate courses shall submit a report of students doing unsatisfactory work; that is, earning grades of D or F. These grades are used for counseling and are not recorded on the student's permanent record in the Office of Admissions and Records. These reports are sent to the Dean of Admissions and Records or a representative and this information is transmitted to the student, parent or guardian, adviser, and dean of the college or school.

Final grades are reported by instructors directly to the Office of Admissions and Records within 48 hours after the closing of the examination. The rule also applies to the final grades of all students registered in other colleges or schools of WVU who are enrolled in law courses.

The final standing of all seniors provisionally approved for graduation at the close of the second semester shall be reported by their instructors to the deans of their colleges and schools, and the final standing of all graduate students provisionally approved for graduation shall be reported to the Dean of the Graduate School. Special report cards are supplied by the Dean of Admissions and Records.

A report of each student's work is made at the close of the semester or summer session to the student or to the student's parents or guardian.

## Grading, Absences, Academic Standing, and Withdrawals

### Grading System

- A – excellent (given only to students of superior ability and attainment)
- B – good (given only to students who are well above average, but not in the highest group)
- C – fair (average students)
- D – poor but passing
- F – failure
- I – incomplete
- W – withdrawal before the end of the fifth week of a semester or withdrawal doing satisfactory work thereafter
- WU – withdrawal doing unsatisfactory work (after the fifth week of a semester)
- P – pass (see Pass-Fail Grading below)
- X – auditor, no grade and no credit
- CR – credit but no grade
- PR – progress. Final grade at end of the second semester (Medical Center)
- S – Satisfactory
- U – Unsatisfactory (equivalent to F) } in certain approved graduate courses

### Pass-Fail Grading

The basic purpose of pass-fail grading for undergraduates at WVU is to promote the undertaking of elective courses unrelated to the student's fields of degree concentration. A secondary purpose of pass-fail grading is to facilitate student grading in performance or competency based courses which may be an integral part of the student's program.

*Student Option.* Any full-time student who has completed 15 hours and maintains a 2.00 grade-point average may elect to take a maximum of 4 hours each semester or each summer session in which the grade earned will be either P (pass) or F (fail). The courses taken for pass-fail grading must be free electives and shall not exceed a total of 18 hours credit. Unless otherwise indicated, excluded are courses in the student's major, courses in other subjects that are required by the major, and courses taken to satisfy either University, college, or school requirements. For example, courses elected to satisfy the physical education, English, Core, or foreign language requirements may not be taken for pass-fail grading.

The student electing the pass-fail grading option will be graded as a regular student and the appropriate letter grade submitted to the Office of Admissions and Records. The Office of Admissions and Records shall convert the earned letter grade to P-F on the basis of A, B, C, or D for a pass, and F for a fail.

The selection of a course for pass-fail grading must be made at registration and may not be changed after the close of the registration period.

*College or School Option.* A department or unit may designate any performance or competency based course which, with approval of the college or school and the University Senate, may be offered exclusively as P-F. Such courses offered only as P-F shall not be included in the maximum of 18 hours that may be freely elected under the student option.

(This revised policy became effective as of the beginning of the First Semester, 1977-78, for grading under the *Student Option*.)

#### Grade Points

The grade-point average is computed on all work for which the student has registered, except for courses with grades of W, WU, P, and X, and is based on the following grade-point values:

A	B	C	D	F	I	U
4	3	2	1	0	0	0

Provided, however, that when a student receives a grade of I and later removes the incomplete grade, the average grade-point standing shall be calculated on the basis of the new grade.

If the final grade of a student in any course is F, the student must take the course again in residence at WVU if the student desires to receive credit for it, unless the dean of the college or school authorizes the exception. The grade of I is given when an instructor believes that the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within the following semester or the next semester in which the student is in residence, and becomes a failure unless special permission is granted by the appropriate Committee on Academic Standards to postpone removal.

For teacher certification the student is responsible for every registration in a course for which a grade of A, B, C, D, F, WU, P, or I is received.

#### Absences

Students who are absent from class for any reason are responsible for work missed.

Students should understand that absences may jeopardize their grades or continuance in the course.

Instructors who use absence records in the determination of grades must announce this fact to students (in writing) within the first five class meetings.

It is the responsibility of the instructor to keep an accurate record of all students enrolled.

Instructors may report excessive absences to the student's dean or adviser.

Students who have been absent because of illness, authorized University activities, or other reasons approved by their deans, have the opportunity to make up regularly scheduled examinations.

#### Uniform Academic Suspension Regulations

Any undergraduate student in a baccalaureate curriculum whose total grade-point average is less than 2.0 but whose total grade-point deficiency is not



large enough to cause suspension, will be notified on the student's grade report from the Dean of Admissions and Records that the student's academic performance is unsatisfactory. Any further action or restriction is entirely the prerogative of the individual college or school.

Any undergraduate student in a baccalaureate curriculum with a grade-point deficiency which exceeds the maximum allowed by the uniform University regulation (see Table below) shall be subject to academic suspension by the dean of the college or school.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. A suspended student may not register for further work without prior approval of readmission by the Academic Standards Committee and the dean of the college or school. Action on academic suspension is to be taken by the appropriate dean at the end of each semester and such action is to be based on a special report from the Dean of Admissions and Records. The sequence of events in bringing about this action is:

1. The Dean of Admissions and Records will forward a special report at grade-reporting time to the college or school deans for appropriate action.

2. The Dean of Admissions and Records will provide the Vice President and Provost for Academic Affairs with a list of students subject to suspension in each college or school.

3. Deans will report to the Vice President and Provost for Academic Affairs the action taken on the students reported to them for academic suspension by the Dean of Admissions and Records.

4. A dean may suspend a student who fails to meet the requirements of academic probation set by the Committee on Academic Standards of the student's college or school.

Students who have been suspended may petition the Committee on Academic Standards of the college of enrollment after the next March 1st or October 1st to ascertain under what conditions, if any, they may be readmitted to that college.

A student suspended for academic reasons who fails to gain readmission to the college or school of the student's choice shall, upon application, be readmitted after one calendar year from the date of suspension, as a Remedial Study student in the College of Arts and Sciences. A Remedial Study student enrolls under special probationary rules that require a 2.0 grade-point average in each

MAXIMUM ALLOWABLE GRADE-POINT DEFICIENCY\*

<i>Total Hours Attempted</i>	<i>Maximum Grade-Point Deficiency</i>	<i>Total Hours Attempted</i>	<i>Maximum Grade-Point Deficiency</i>
0-20	32	61-65	12
21-25	26	66-70	12
26-30	20	71-75	11
31-35	19	76-80	10
36-40	18	81-85	9
41-45	17	86-90	8
46-50	16	91-95	7
51-55	15	96 and above	6
56-60	14		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.00 average and the number of grade points that a student has actually earned in all courses attempted.

semester of enrollment. As a Remedial Study student, the student is not liable to suspension because of cumulative grade-point deficiencies. A student may, after successfully bringing the cumulative grade-point average up to 2.0, petition to have the work completed as a Remedial Study student apply toward the completion of degree requirements as may be appropriate.

Suspension by these procedures shall be termed academic suspension and the above regulations supersede all other regulations for academic suspension.

## Withdrawals

### Withdrawal from Class or University

Until the mid-semester date established by the University Calendar, a student may withdraw from part of his/her course work by obtaining his/her adviser's signature on the University course withdrawal form. The adviser's signature certifies that (a) the student's course load is not reduced below the required minimum, (b) the student is not on academic probation, and (c) the course to be discontinued is not a prerequisite or corequisite to another course in the student's schedule. If these preconditions for withdrawal are not met, the student may request approval from the Committee on Academic Standards of the student's school or college.

After mid-semester, a student must obtain the approval of the appropriate Committee on Academic Standards to withdraw from any class. Approval to withdraw from a course during the second half of a semester or summer course shall be granted only for: (a) a significant increase in employment after mid-semester; (b) a verified acute or long-term mental or physical illness which requires a reduction in course load; or (c) other distress situations beyond the control of the student. Poor performance generally will not be considered adequate justification for withdrawal from class. A student may not withdraw during the 10-day period before the last day of regular classes of a semester (or the 5-day period before the last day of classes of any summer course) as established by the University Calendar, except when withdrawing from the University.

A student who withdraws before mid-semester (first half of a summer course) shall receive a grade of W. The grade to be recorded in case of withdrawal after mid-semester will be W, if the work is satisfactory; or WU, if the work is unsatisfactory. W or WU grades will not be used in the computation of the semester's grade-point average.

A student has the right to appeal the decision of the Committee on Academic Standards to the appropriate dean provided the appeal is made within the defined withdrawal period.

The student is responsible for seeing that class withdrawal forms are signed and delivered to the Office of Admissions and Records. The withdrawal becomes official only after the appropriate forms have been received by the Office of Admissions and Records.

### Re-Enrollment After Withdrawal

An undergraduate student who withdraws from WVU in two consecutive semesters (excluding summer session) may not register for further work without approval of the dean of the college or school in which the student wishes to register and subject to conditions set by that dean.

## Advisers, Committee on Academic Standards

### Advisers

Each student entering WVU is assigned an adviser whose duty is to assist students in preparing schedules, assign them to classes, and certify their study lists to the Dean of Admissions and Records. The adviser is expected to give such advice and sympathetic guidance as the students may need in their work at the University. Students are expected to go freely to their advisers to discuss problems.

Advisers, upon receipt of reports of excessive numbers of absences, shall have conferences with the student concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, the case shall be reported to the dean of the college or school.

### Committee on Academic Standards

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

## Cheating

### Procedural Rules for Handling Cheating Cases

Cheating is condemned at all levels and in all areas of life. Like a crippling malady, it leaves its mark subjectively. Cheating indicates a weakness and inability to meet and face the issues and problems of life. It creates an atmosphere of mistrust, disrespect, and insecurity. The effects and influence of cheating will necessarily be reflected in commerce and government and in all of the professions and callings as well as in the classroom and in the home. Students at WVU should act to discourage and eliminate cheating of every kind and character for the moral and mental well-being of themselves and their fellow students. Likewise, the teaching faculty should remove and eliminate every situation which provides avenues and opportunities for cheating, thereby contributing to the inculcation of the principles of honesty integrity, self-reliance, and self-respect in students. It is expected that University officials will have little occasion to place in operation the established procedures for handling cheating cases. Through these procedures and by means of a continued awareness, on the part of both faculty and students, of the intellectually and morally weakening effects of cheating, a healthy strengthening of the moral fiber of the University may be envisioned and accomplished.

Cheating may be defined as including:

1. Obtaining help from another student during examination.
2. Knowingly giving help to another student during examination.
3. The use of notes, books, or any other unauthorized sources of information during examination.
4. Obtaining, without authorization, an examination or any parts thereof before taking the examination.



5. Submitting a report, notebook, speech, outline, theme, or other problem for credit that has been knowingly obtained or copied in whole or in part from another individual's academic composition, compilation, or other product.

6. Submitting or participating in the submission of a report or examination paper falsely represented as being the result of the original efforts of the submitting student. [Plagiarism is a serious offense in whatever form it may appear, be it the submission of an entire article falsely represented as the student's own, the inclusion within a piece of the student's writing of an idea for which the student has not provided sufficient documentation, or the inclusion of a documented idea not sufficiently assimilated into the student's language and style. A student who has any questions about whether a particular inclusion in the student's work might constitute plagiarism should take the responsibility of requesting the aid and clarification of the instructor to whom the student is submitting the work.]

7. Altering the record of any grade in any gradebook, office, or other record.

8. Any other type of misconduct, offense, or manifestation of dishonesty or unfairness in or relating to academic work.

The deans of the several colleges and schools shall have the authority and shall be responsible for the handling of cheating cases arising or occurring within their respective colleges or schools. (Instructors of graduate students charged with cheating should follow the procedures outlined in the *Graduate School Catalog*.)

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians and security officers, shall promptly report, via the department chairperson or immediate superior, if any, each known case of cheating, as hereinbefore defined, to the dean of the college or school concerned.

Each case of cheating shall be handled with dispatch, and the dean shall promptly report thereon in writing to the President of WVU and shall at the same time place a copy of such report in the permanent record of the student concerned and forward another copy thereof to the Dean of Student Educational Services for the student's permanent records. The report shall include a brief statement covering the facts and circumstances of the case and the discipline applied or recommended.

In cases wherein cheating occurs in a college or school other than that in which the student is registered, the minimum penalty, as prescribed in the paragraph below, shall be applied by the dean of the college or school in which the cheating occurred. In handling such cases the dean shall follow the procedure in the above paragraph and then immediately refer the case, by transmittal of a copy of the report thereon as prescribed in the above paragraph, to the dean of the college or school in which the student involved is registered. The purpose of this copy of the report is for information and for imposition or recommendation of such further discipline or penalty as may be warranted. Upon completion of a review of and action on the case, the dean of the college or school in which the student is registered shall thereupon compose an independent written report on the case and transmit same to the President of WVU and otherwise distribute copies thereof as provided in the above paragraph.

The deans and their respective teaching faculties shall take remedial and preventive steps to remove every opportunity for any situation conducive to cheating. Particular attention shall be given to the maintenance of a high level of proctoring in those colleges, schools, and departments wherein proctoring is

employed and to security against student access to or knowledge of examination and test materials before the time of the intended use thereof for student examination and testing purposes. The deans shall exercise their independent discretion as to methods and means of accomplishing these ends and may employ therefor faculty meetings, written instructions, or other effective devices and measures.

The *minimum* penalty for all cases of cheating shall be dismissal from the course and the establishment of a grade of F in the course, as of the date of cheating, *unless in the opinion of the dean there are extenuating circumstances which might indicate the advisability of a lesser penalty*. Where the grade of F in the course involved is a part of the penalty for cheating, that grade is to be entered on the student's permanent record and to remain there even though the student withdraws from the course or from WVU.

For a second or subsequent cheating offense, in addition to failure in the course, suspension or expulsion of the student shall be recommended by the dean for the President's action. The office of the Dean of Student Educational Services shall maintain its records of reports in cheating cases so as to detect and ascertain promptly and accurately the occurrence of second or subsequent cheating offenses and, upon inquiry by the dean, shall promptly advise whether the student has been guilty of any prior cheating offense or offenses.

Suspension or expulsion of a student guilty of cheating may, in first offense cases, be recommended by the dean to the President if the facts and circumstances of the case so warrant or the rules, regulations, or policy of the college or school concerned so require.

In cheating cases involving criminal offenses, such as theft of examination or test materials, alteration of records, breaking or entering buildings, offices, desks, safes, or filing cabinets, damage to public property and other like or similar misconduct, the academic penalties and discipline as herein prescribed shall be applied and in addition thereto the dean of the college or school concerned shall, with the approval of the President of WVU, cause the facts of each case to be presented to the Prosecuting Attorney of Monongalia County, West Virginia, for further investigation and for prosecution by injunction or otherwise as may be warranted. Upon the issuance of a warrant for or the return of an indictment against a student on account of any such offense, the President shall suspend such student from WVU pending final prosecution thereon. If the student is acquitted of the offense, the student's suspension may be vacated, but if convicted of the offense, the student shall be expelled from WVU.

A student may appeal the decision or action of a dean in a cheating case to the President for review and reconsideration and the President may thereupon affirm or reverse, in whole, or in part, the decision or action of a dean.

In action on any cheating case, whether on appeal by a student or on recommendation or reference by a dean, the President may consider the case record, may further investigate or cause to be investigated the facts and circumstances of the case, and may act personally thereon and dispose thereof, or the President may, in his discretion, refer the case to another appropriate University office, committee, or agency for review investigation, consideration, and recommendation before final action thereon and disposition thereof.

It is recommended that, in all phases of cheating cases, care and caution be observed so as to avoid accusation or charge of cheating or related impropriety which may be without foundation. A false accusation may have serious implications and result in reflection on or harm to an innocent and unoffending student and discredit to the faculty.

# Medical Center Basic Sciences

The Departments of Anatomy, Biochemistry, Microbiology, Pharmacology, and Physiology and Biophysics offer individual graduate programs leading to the M.S. and Ph.D. degrees and provide courses for students of medicine, dentistry, pharmacy, nursing, and other allied health professions.

(Detailed information concerning Graduate School academic information is presented in Part 2 of the *WVU Graduate School Catalog*.)

## Anatomy

The Department of Anatomy offers graduate programs which are committed to the training of competent researchers and capable teachers. This is accomplished by the completion of a carefully designed plan of study tailored to the individual student's interests. The program begins with instruction in basic morphological, developmental, and functional aspects of human anatomy. Additional related course work and electives are required. These selected courses strengthen the area of interest of the student. The student then conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.).

### Admission Requirements

In addition to the admission procedure of the Graduate School, the Department of Anatomy requests that each applicant complete a departmental application form, obtained from the department. After an application is favorably reviewed by the departmental Graduate Committee, applicants are invited for a personal interview whenever practical. The applicant is admitted by a majority vote of the departmental faculty.

It is recommended that the following courses be completed before entering the graduate program: Algebra, trigonometry, general physics, inorganic and organic chemistry general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology, and two years of French, German, or Russian. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants who desire consideration for financial aid should complete the application process before January 15.

### Doctor of Philosophy

The first year of study is usually occupied with required course work within the Department of Anatomy. These courses include gross anatomy, micro-anatomy, neurobiology, introduction to research, and seminar in anatomy. Required courses in other basic medical sciences, such as biochemistry and physiology, are usually taken in the second year. Twelve hours of additional graduate-level courses are also required. These requirements will have been satisfied when the student earns a grade of at least B in each of the courses taken



in the Department of Anatomy and has maintained a 2.75 overall grade-point average as required by the Graduate School.

To be admitted to candidacy for the Ph.D. degree the student must satisfy the above requirements, demonstrate a reading knowledge of one foreign language, pass a written and oral comprehensive preliminary examination, and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree each student must complete a dissertation based on original research and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an Advisory Committee, which is composed of faculty members selected by the student.

The student often culminates the training period with presentations at regional and/or national scientific meetings. The Southern Society of Anatomists and the American Association of Anatomists are the most suitable meetings for this purpose.

### Master of Science

The master's program in Anatomy is offered as a terminal degree only for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D.

An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy plus 6 to 9 hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work the student must complete a thesis based on original research and defend the thesis at an oral comprehensive examination.

## Anatomy

Professors Beresford, Jones (Emeritus), Kimmel (Emeritus), McCafferty Reyer, and Williams (Emeritus); Associate Professors Carmichael, Culberson, Frederickson, Friedman, Haines, Hilloowala, Hinton, Lass, Overman, and Pinkstaff; Assistant Professors DeNee, Pope, and Walker.

*Research Areas*—Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues and organs, under normal and experimental conditions with histochemical, electron microscopic, autoradiographic, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration and the effects of drugs and other environmental agents on development. Neuroanatomy: Experimental, comparative and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

### Anatomy

Anat.

101. *Principles of Human Anatomy*. (For paramedical students only.) I. 3-4 hr. PR: Consent. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.

102. *Gross Anatomy*. (For physical therapy students.) II. 3 hr. PR: Anat. 101 and/or consent. Functional gross anatomy of the back, extremities, head and neck.
103. *Microanatomy*. (For physical therapy students.) I. 2 hr. PR: Consent. Introductory cell and tissue structure for students in the Division of Physical Therapy.
109. *Oral Histology* (For dental hygiene students.) II. 3 hr. PR: Consent. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.
152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture. (Same as Sociology/Anthropology 152.)
301. *Gross Anatomy of the Trunk*. (For medical and a limited number of regular full-time graduate students in basic medical sciences, with consent of chairperson.) I. 5 hr. PR: Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum.
302. *Gross Anatomy of the Head and Neck*. (For medical and a limited number of regular full-time graduate students in the basic medical sciences with consent of chairperson.) II. 3 hr. PR: Gross anatomical study of the head and neck.
304. *Gross Anatomy of the Extremities*. (For medical students and a limited number of regular full-time graduate students in basic medical sciences, with consent of chairperson.) II. 2 hr. PR: Gross anatomical study of the upper and lower extremities.
305. *Microanatomy*. (For medical students and a limited number of regular full-time graduate students in basic medical sciences with consent of chairperson.) I. 6 hr. PR: General biology or equiv. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities*. (For dental and graduate students.) I. 4 hr. PR: General biology and consent. Gross anatomical study of the back, upper extremity, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy*. (For dental and graduate students.) II. 5 hr. PR: Anat. 306 or equiv. and consent. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy*. (For students in physical therapy and graduate students, and other health sciences.) II. 2 hr. PR: Consent. Gross and microscopic structure of the central nervous system. (See also Conjoined Course 375, Neurobiology.)
309. *Microanatomy and Organology*. (For dental and graduate students.) I. 4 hr. PR: General biology or equiv. and consent. Cells, tissues, and organs.
312. *Special Topics in Anatomy*. II. 2-4 hr. PR: Anat. 301 or 306; and 305 or 309; consent. Different topics of current interest in anatomy, not included in the regular graduate courses.
314. *Applied Anatomy*. II. 2-6 hr. per sem PR: Consent. Detailed study of anatomy adapted to the needs of the individual student.
318. *Oral Histology and Embryology*. (For dental and graduate students.) II. 2 hr. PR: Anat. 305 or 309, and consent. Structure, function, and development of oral tissues and organs.
401. *Advanced Gross Anatomy*. I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 306, 307 and consent. Morphological and functional analysis of a selected region. With dissection.
402. *Advanced Developmental Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301, 302, 304 and/or consent. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations. (Course not offered in 1978-79.)

403. *Seminar*. I, II. 1-6 hr. (1 hr. per sem.) Course may be repeated. PR: Consent. Special topics of current or historical interest.
405. *Experimental Embryology*. II. 3 hr. PR: Embryology and cellular physiology or biochemistry and consent. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. PR: Conjoined Course 375 and/or consent. Detailed study of selected areas of the nervous system. May be repeated.
408. *Histochemistry*. II. 3 hr. PR: Anat. 305 or 309, biochemistry, and consent. Histochemical theory and techniques.
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions. (*Course not offered in 1978-79.*)
491. *Advanced Anatomy*. I, II. 2-8 hr. PR: Consent.
497. *Research*. I, II, S. 1-15 hr. PR: Consent. May be repeated as needed with consent of the Graduate Committee.

## Biochemistry

The intent of this program is to prepare doctoral candidates to contribute in a significant fashion to the field of biochemistry; the program consists of a vigorous curriculum in the classroom and laboratory. During the first nine months the student achieves familiarity with the content of biochemistry by taking a comprehensive introductory course and two or more specialized courses in biochemistry. He or she will also take a major course outside the department; e.g., advanced organic chemistry or physical chemistry. During this same period the student will obtain an extensive introduction to the methodology of biochemistry by spending periods of four weeks each in the laboratories of four or five faculty members; during each period the student will carry out a project which is related to the research going on in that laboratory.

At the end of the first nine to twelve months the student develops, with faculty advice, a doctoral thesis project which is pursued for the next 2½ to 3 years; course work is still undertaken but the emphasis is shifted to research. Finally the student prepares and presents the results of his or her work in the form of a dissertation. A period of four years is usually required to complete this curriculum.

A curriculum leading to an M.S. degree also is possible by special arrangement.

### Admission Requirements

The entering graduate student should hold a bachelor's degree with a science major and should have successfully completed the following courses: Physics, Organic Chemistry, Calculus, Physical Chemistry, Qualitative Analysis, and Quantitative Analysis; a deficiency in certain of the above courses may in some cases be made up after admission to the program.

Application is made by having the following items sent to the Department: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's potential; (c) a transcript of the applicant's college grades; (d) the official Graduate Record Examination (GRE) scores. Usually students are admitted only once a year in mid-August. The deadline for the receipt in the Department of applications and supporting documents is June 1; to be considered for financial



support applications should be submitted much earlier, preferably by February 1. For more details write to: Graduate Coordinator, Department of Biochemistry, WVU Medical Center, Morgantown, WV 26506.

## Biochemistry

Professors Sander (*Chairman*), Canady, Koppelman, Lotspeich, Rafter, Resnick, and Wirtz; Associate Professors Blair, Ellingson, Harris, Katz, and Tryfiates; Assistant Professors Jagannathan and Ponton.

*Research Areas*—Hormonal regulation of hepatic carbohydrate metabolism. Enzyme kinetics. Lipid metabolism and biogenesis of membranes. Structure and function of transfer RNA; RNA synthesis in mammalian cells. Atherosclerosis. Physical chemistry of proteins. tRNA methyltransferases in normal and tumor systems. Influence of nutrition on tissue protein and amino acid metabolism. Chemistry of host-parasite relationship. Interaction of macromolecules in biological systems. Physical biochemistry. Nutritional oncology. Immunochemistry.

## Biochemistry

### Biochem.

139. *Introduction to Biochemistry*. I. 4-5 hr. PR: Inorganic chemistry. (For pharmacy and medical technology students; others by consent.) (A.) Lecture and conference, 4 hr. (B.) Laboratory, 1 hr.
231. *General Biochemistry*. I. 7 hr. PR: Inorganic chemistry organic chemistry. (For medical students and limited number of regular full-time graduate students in basic science departments with consent of Chairman of Biochemistry.) Lecture, conference, and demonstration.
239. *Clinical Chemical Techniques*. II. 4 hr. PR: Biochem 139, 231 or equiv. (Primarily for medical technology students.) Open to other qualified students by consent.
305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, organic chemistry and consent. (Dental and graduate students.) Lecture, conference, and demonstration.
399. *Special Topics*. I, II, S. 1-12 hr. PR: Consent.
491. *Advanced Study*. I, II. 3-4 hr. PR: Consent. Designed primarily to provide a background for students who use biochemistry in their research. Emphasis will be on basic principles and concepts useful for the solution of important biological problems. The principles and concepts will be presented in the manner in which they developed and grew out of laboratory experimentation in biochemistry.
496. *Graduate Seminar*. I, II. 1 hr. PR: Biochem. 231 or equiv., consent. Presentation and discussion of special topics.
497. *Research*. I, II, S. 1-15 hr.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

314. *Medical Human Growth and Development*. (For medical and limited number of graduate students.) II. 1 hr. PR: Consent. Basic considerations of embryology, organogenesis, teratology and other factors influencing intrauterine growth and development and the adaptation of the fetus to extrauterine life.

320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. Graduate students, upperclassmen in the sciences, medical students. Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
322. *Biostatistics and Evaluation of Medical Literature*. (For medical and limited number of graduate students.) I. 2 hr. PR: Consent. Statistical analysis of biologic phenomenon as related to medicine.
350. *Radiation Safety and Isotope Usage*. II. 1-2 hr. PR: Physics 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; ERDA (formerly AEC) and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
370. *Medical Genetics*. (For medical students and limited number of regular full-time graduate students in basic medical sciences, and consent of the chairperson.) II. 1 hr. PR: Consent. Genetics and heritable diseases in man.
375. *Neurobiology*. (For medical students and limited number of regular full-time graduate students in basic medical sciences, and consent of the chairperson.) II. 6 hr. PR: Anat. 301 and Physiol. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of first three years of medical curriculum: (Graded as S or U.) The selective program for fourth-year medical students offers a wide range of opportunities, in the basic sciences, medical specialties and sub-specialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at WVU Medical Center in Morgantown and approved programs at the Charleston Division, WVU Medical Center; Wheeling Division, School of Medicine; and Veterans Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans the individual program, with faculty advice. Flexibility is permitted. With consent of the instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks notice before changing an intramural or extramural selection (See intramural and extramural folders, published annually, describing the selective opportunities.)

## Microbiology

The Department of Microbiology offers programs of study leading to Master of Science and Doctor of Philosophy degrees in Medical Microbiology. Students are given extensive training in microbiological research methodology. The program aims towards training students capable of designing and carrying out their own research programs and teaching microbiology.

### Admission Requirements

Applicants should have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics—including calculus—in order to be considered for admission. Applicants must submit to the Department of Microbiology a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores, both aptitude and advanced. In addition, transcripts and an official application for admission to the Graduate School must be sent directly to the WVU Office of Admissions and Records. Applicants for admission to a degree program should have a grade-point average of 3.0, or better, and a score of 600 or above on each of the GRE examinations. Early application is encouraged. An applicant desiring financial aid should complete the application before January 1.

## Program Requirements

Every student must take a two-semester sequence in basic microbiology (Microbiol. 310 and 311) and two semesters in biochemistry. Seminar is a required course for all students each semester they are in residence. All students in the department also are required to participate in teaching at least one semester a year. The remaining courses are selected by the student and the advisory committee from courses in Microbiology, numbered 317 or higher, and from outside the department.

The department has informal noon-hour journal clubs scheduled four days a week, one each in cell biology, immunology, virology, and bacteriology and parasitology.

The Master of Science program requires 30 hours of course work, of which at least 20 hours must be in microbiology. Six hours must be in research. A research thesis and a final oral examination are required. A grade-point average of 3.0 must be achieved. In general, two years are needed to complete the M.S. program.

The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation, and passing of qualifying and final oral examinations. Appropriate course work with a grade-point average of 3.0 also is required. Where appropriate, course work in related subjects, such as calculus, physical chemistry, and statistics, will be required. Three years are usually needed to complete the Ph.D. program.

For additional information, write to the Chairman, Department of Microbiology, WVU Medical Center, Morgantown, WV 26506.

## Microbiology

Professors Snyder (*Chairman*), Burrell, Deal, Hall, Slack (Emeritus), Sodeman (Pathology), Veltri (Surgery) and Voelz; Associate Professors Gerencser, Kirk, Mengoli, and Pore; Assistant Professors Charon, Ganguly (Medicine), Major (part-time), Olenchock (part-time), Thompson, and Yelton; Adjunct Assistant Professor Duda.

*Research Areas*—Pathogenic bacteriology: Mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: Pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: Nutrition and metabolism of a variety of pathogenic microorganisms. Genetics: Basic studies on the mechanisms of genetics including transfer of genetic information. Virology: Basic studies on viral-tumor relationships; virus-induced antigens in transformed cells; pathogenesis of lymphocytic choriomeningitis virus. Parasitology: Host-parasite relationships between helminth parasites and insects and vertebrate hosts. Electron Microscopy: Cytological studies of the fine structure of microorganisms and the influence of environment on these structures. Immunology: Studies on the mechanisms of antigen-antibody reactions and the development of hypersensitivity; immunopathology of pulmonary disease.

## Microbiology

### Microbiol.

26. *Microbiology*. I. 3-4 hr. (For students in paramedical sciences.) Pathogenic microorganisms.



220. *Microbiology*. II. 4 hr. (For pharmacy students.) PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
223. *Microbiology*. II. 5 hr. (For medical technology students; graduate students with consent.) PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
224. *Parasitology*. II. 4 hr. (For medical technology students.) Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
301. *Microbiology*. I. 5-7 hr. (For medical students.) PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms. Emphasis on use of microbiology in solving clinical problems.
302. *Microbiology*. I. 5 hr. (For dental students.) PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR or Conc.: Biochemistry; consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. Life cycles of a few model systems. (Students may enroll for one to three parts of the course.)
311. *Principles of Infection and Resistance*. II. 1-5 hr. PR or Conc.: Biochemistry; consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students may enroll for one to five parts of the course.)
317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available.
327. *Parasitology*. II. 4 hr. (For graduate students.) PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*
  - Pathogenic Virology*. I. 3 hr. PR: Microbiol. 310 and 311 or equiv., consent. Pathogenesis of medically important viruses and mechanisms for their control.
  - Pathogenic Bacteriology*. I. 2-3 hr. PR: Microbiol. 311, consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease.
  - Clinical Laboratory Bacteriology*. II. 2-4 hr. PR: Microbiol. 311 or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. The laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)
  - Microbial Genetics*. I. 4 hr. PR: Microbiol. 310 or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models. (Course not offered in 1978-79.)
  - Bacterial Physiology*. II. 2 hr. PR: Microbiol. 310, biochemistry, consent. The physiology and metabolism of bacteria of medical, industrial, and ecological importance. (Course not offered in 1978-79.)
  - Immunobiology*. 2 hr. PR: Microbiol. 311, consent. Discussion of biological and cellular aspects of immunology. Immunobiology, immunopathology, and cellular immunology receive strong emphasis. This course is designed to complement Biochem. 491. (Course not offered in 1978-79.)
  - Medical Mycology*. I. 4 hr. PR: Microbiol. 311 or equiv. Advanced study of the fungi of medical importance, including the pathobiology of mycoses and toxicoses. (Course not offered in 1978-79.)

*Comparative Cytology*. II. 4 hr. PR: Consent. Limited enrollment. Basic features in structure and function of animal, plant, and microbial cells and their organelles. Projects in electron microscopy. (Course not offered in 1978-79.)

*Advanced Cellular Biology*. II. 1-3 hr. PR: Consent. Interdisciplinary team-taught course. Includes three modules: an overview of cell biology, cell surfaces, and somatic cell genetics. (Students may enroll for one, two, or three modules.)

*Tumor Virology*. II. 3 hr. PR: Biol. 315 or equiv., consent. A consideration of the molecular and biochemical aspects of viruses which cause tumors and the mechanisms by which they cause cellular transformation.

*Clinical Laboratory Virology*. S. 3 hr. per 6-week session. PR: Consent. Lectures and laboratories on isolation of viruses from clinical specimens. Includes serological methods.

496. *Seminar*. I, II. 1 hr. PR: Microbiol. 310 or equiv. (Graded as S or U.)

497. *Research*. I, II, S. 1-15 hr. PR: Microbiol. 310 or equiv. Students may enroll more than once. (Graded as S or U.)

## Pathology

Professors Rodman (*Chairman*), Albrink, Chou, Hales, Morgan, and Sodeman; Professor Emeritus Anido; Clinical Professor Emeritus Ladewig; Clinical Professor Abernathy; Associate Professors Boyd, Bouquot, Frost, Jagannathan, Rochlani; Clinical Associate Professors Bell, Caldwell, and Cendana; Assistant Professors Crosby, Jenkins Keyes, Moya and Shah; Clinical Assistant Professors Giarritta, Marcus, Mastrangelo, Pataki, Reyes, Sabo, Salisbury, Sohn, Swoyer, and Valencerino; Instructor Gnepp.

*Research Areas*—Atherosclerosis; thrombosis: platelet aggregation and function; lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electronmicroscopic) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; biomedical applications of laboratory medicine; applied laboratory studies in microbiology.

## Pathology

### Path.

128. *Introduction General Pathology*. I. 2 hr. PR: Enrollment in Dental Hygiene or Physical Therapy. A study of the basic pathologic processes in man.

129. *Oral Pathology*. II. 3 hr. PR: Path. 128, Dental Hygiene major or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.

328. *General Pathology*. (For dental students.) I. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.

338. *Oral Pathology I*. II. 3 hr. PR: Path. 328, consent. Application of knowledge gained in Path. 328 to the study of specific diseases affecting the oral cavity.

350. *Hematology*. 3 hr. PR: Consent.

351. *Pathology and Laboratory Medicine*. (For medical students and limited number of regular full-time graduate students in basic medical sciences and consent of the chairperson.) I, II. 15 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systematics approach to disease states.

353. *Oral Pathology II*. I, 2 hr. PR: Path. 338, consent. Continuation of Path. 338.
355. *Clinico-Pathologic Correlation Conference*. (For dental students, third year.) II. 1 hr. PR: Consent; Path. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 and 354, and consent. Microscopic and gross specimens from selected autopsies.
382. *Advanced Oral Histopathology*. I, II. 1-2 hr. PR: Path. 338, 353, consent. Microscopic study of head and neck lesions.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.
497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology

Pharmacology is the medical science which involves all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology offers graduate studies leading to the degrees of Master of Science and Doctor of Philosophy with research concentrations in such areas as automic pharmacology, biochemical pharmacology, cardiovascular pharmacology, endocrine pharmacology, neuropharmacology, psychopharmacology, molecular pharmacology, pharmacogenetics, malarial chemotherapy, and toxicology.

### Admission Requirements

Regular applicants for the graduate program in pharmacology should present, as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; five semesters of chemistry including two semesters of organic chemistry and one semester of physical chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination – including the advanced test in either chemistry or biology – are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write to the Director of Graduate Studies, Department of Pharmacology, WVU Medical Center, Morgantown, WV 26506.

### Master of Science

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is recommended as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project. The course work requirements for the M.S. in pharmacology usually consist of Physiology 344 and 345, Biochemistry 231, Statistics 311, Pharmacology 361, 364, 461, 462, and 497. Some students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a



master's degree. These students must submit a comprehensive progress report on their research to date before taking either the written or the oral Ph.D. qualifying examinations.

### Doctor of Philosophy

Before official admission to candidacy for the doctorate, the student must satisfactorily complete both a written and an oral comprehensive qualifying examination. The written examination is generally taken during the sixth semester in the program (not counting summers) on or about March 1. The student will generally have some choice as to questions which must be answered. Two days (6 hours a day) are generally required to complete the written examination. When a student has successfully passed the written examination, a committee – ordinarily consisting of at least three members of the Department of Pharmacology and two members from outside the department – is appointed and constitutes the oral examining body. The oral portion of the qualifying examination is held not less than two nor more than six weeks after the successful completion of the written examination.

### Dissertation

Upon admission to candidacy for the Doctor of Philosophy degree, the candidate must select a topic for dissertation under the direction of the candidate's adviser, complete a dissertation which makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

### Pharmacology

Professors Fleming (*Chairman*), Craig, Robinson, Stitzel, Thomas, Westfall, and Van Dyke; Associate Professors Azzaro (Neurology and Pharmacology), Graves (Oral Surgery and Pharmacology), Smith (Anesthesiology and Pharmacology), Mawhinney (Urology and Pharmacology), Colasanti (Ophthalmology and Pharmacology), and Urquilla; Assistant Professors Bell, Reasor, and Fedan (part-time).

*Research Areas* – Autonomic pharmacology; autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release and metabolism of transmitters and adrenal medullary hormones. Chemotherapy: Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: Biochemical basis of epilepsy, mechanism of action of anti-convulsant drugs, neuromediators in the central nervous system. Toxicology: Metabolism of toxic agents, pulmonary toxicology, environmental toxicology, perinatal pharmacology and toxicology. Electron microscopy: Effects of drugs on the ultrastructure of cells.

## Pharmacology

### Pharmacol.

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
242. *Pharmacodynamics and Therapeutics II*. I. 6 hr. (For pharmacy and graduate students.) PR: Pharmacy 240 or consent. Continuation of Pharmacy 240.
360. *Pharmacology*. I. 4 hr. (For dental and graduate students.) PR: Dental student standing or consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.
361. *Pharmacology*. II. 6 hr. PR: Consent of department chairman. (For medical students and a limited number of regular, full-time graduate students in basic medical science departments.) Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
363. *Toxicology*. II. 3 hr. PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on biochemical and molecular mechanisms of chemical toxicity. Offered in alternate years. (*Course not offered in 1978-79.*)
364. *Advanced Pharmacology*. I. 1-4 hr. PR: Pharmacol. 361 or consent. Offered every third year. Advanced lectures and discussion of general principles of pharmacology including physiochemical properties, absorption, distribution and metabolism of drugs, and drug receptor theory. (*Course not offered in 1978-79.*)
365. *Advanced Pharmacology*. I. 1-4 hr. PR: Pharmacol. 361 or consent. Advanced lectures and discussion of specialized areas of pharmacology including biochemical, endocrine and cardiovascular pharmacology. Offered every third year.
366. *Advanced Pharmacology (Laboratory in Drug Evaluation)*. S. 1-3 hr. PR: Consent. Laboratory procedures and demonstrations in assessing drug action (*Course not offered in 1978-79.*)
367. *Advanced Neuropharmacology*. I. 1-4 hr. PR: Pharmacol. 361 or consent. Advanced lectures on the actions of drugs on the central and peripheral nervous system. Offered every third year. (*Course not offered in 1978-79.*)
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pharmacol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology. Current literature pertinent to pharmacology including journals of allied biological sciences.
490. *Teaching Practicum*. (For advanced graduate students.) I, II. 1-2 hr. per sem. PR: Pharmacol. 361 and consent. Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology and Biophysics

The objective of the Department of Physiology and Biophysics graduate program is to educate physiologists in the methods of conducting independent research of high quality, and of effective teaching. The department's graduates are conversant with all aspects of physiology and are prepared to interact creatively with scientists in related fields. To this end the program leading to the degree of Doctor of Philosophy emphasizes close interaction of faculty with students and a high faculty/student ratio. The Master of Science program includes 24 hours of course work and a research project leading to the thesis.

## Admission Requirements

Individuals from a wide variety of backgrounds study Physiology and Biophysics as one of the basic medical sciences. It is, in fact, not uncommon to find physiologists with such diverse backgrounds as engineering, biology, chemistry, physics, psychology, and mathematics. The department encourages the participation of qualified individuals from many undergraduate and graduate disciplines. There are, however, certain prerequisite courses a student must take either before enrollment or during the first year in the program. These prerequisites, designed to give a student the proper foundation for advanced study in Physiology and Biophysics, are: Calculus (2 semesters, 3 desired), Physics (2 semesters, with calculus), Modern Biology (2 semesters), and Physical Chemistry (1 semester).

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, and a completed departmental application form. Graduate Record Examination scores (aptitude and one advanced test) are useful, and are required for financial aid. A bachelor's degree or equivalent is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs can be obtained by writing to the Graduate Adviser, Department of Physiology and Biophysics, WVU School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as June of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

## Doctor of Philosophy

The first year in the program normally includes the following courses: Medical Physiology (7 hours), Biochemistry (4 hours), Statistics (3 hours), Neurophysiology (3 hours) or Neurobiology (6 hours), Graduate Colloquium (2 hours), Physiological Methods (5 hours), electives, and prerequisites (a limited number of which may be made up during the first year). The first-year curriculum familiarizes the student with some of the same basic science material presented to the medical students. Medical physiology, biochemistry, and neurophysiology/neurobiology are part of the medical curriculum. The courses are team-taught by scientists specializing in each of the areas covered. In addition, the student is introduced to the full range of activities in the department through the Graduate Colloquium, and Physiological Methods provides a foundation in the research strategies, techniques, and tools used by physiologists and biophysicists.

During the first summer, students may begin research projects in departmental research laboratories of their choice. They also may take elective courses or make up prerequisites.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses normally include: Advanced Physiology (12 hours), Physiological Methods (2-4 hours), Graduate Colloquium (2 hours), Seminar (a total of 2 hours must be taken during the student's program), and Teaching Practicum (assisting in laboratory/demonstrations, conducting small-group conference sessions, giving lectures). Commonly chosen electives include gross anatomy, pharmacology, and advanced or specialized topics in biochemistry, pharmacology, mathematics, physics, engineering, as well as physiology and biophysics.



The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. Students begin to present discussions of research topics in the Graduate Colloquium and Seminar.

After completion of the second academic year, the student takes a qualifying examination consisting of three written research design papers followed by an oral examination dealing with these papers and with the course work of the preceding two years. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy in Physiology and Biophysics.

During the third and fourth years the student may enroll in elective courses. Yearly participation in the Teaching Practicum provides experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research, with presentations about the research in the Graduate Colloquium. During these years the students will attend and present papers at national meetings of scientific societies (American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences.)

The Ph.D. program is generally completed in four years.

## Master of Science

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first academic year and first summer are likewise identical for the master's and doctoral students. During the second year of the master's program, the student enrolls for 4 hours of Advanced Physiology, Graduate Colloquium, and sufficient electives to fulfill the required 24 hours of course work. In addition, 6 hours of research are directed toward completion of the thesis. The M.S. program is typically completed in two years.

## Physiology and Biophysics

Professors Hedge (*Chairman*), Gutmann, Lee, Moran, and Weber; Associate Professors Brown, Colby, Franz, Gladfelter, McIntyre, Miles, and Sherwood; Assistant Professors Frazer, Hankinson, and M. Morgan; Lecturer Caldwell.

*Research Areas* – Cellular, membrane transport and electrical properties of excitable tissue; integrative and behavioral functions of the nervous system; regulation and dynamics of the circulation, respiration, endocrine, and electrolyte balance systems; theoretical and experimental biophysics; and biomedical instrumentation.

## Physiology

### Physiol.

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lect., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and consent of department chairperson. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relation to normal physiology.

248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lect., 2 lab.
341. *Physiological Methods I*. II. 1-5 hr. PR: Variable for four modules: none for modules 1 and 2; calculus and physiology, or consent, for modules 3 and 4. Research techniques and strategies for physiology and biophysics, presented in four modules: animal surgery, computer methods, physiological instrumentation, and compartmental analysis. Enrollment in various combinations of modules for variable credit possible.
342. *Physiological Methods II*. I. 1-4 hr. PR: Variable for four modules: Calculus and physiology, or consent, for modules 1, 2; module 3 of 441 or consent, for modules 3 and 4. Advanced research techniques and strategies in physiology and biophysics, in four modules. Subcellular physiological methods, principles of modelling, electrophysiology, and monitoring physiological parameters.
343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical basic sciences.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lect., 1 conf., 1 lab.
344. *Medical Physiology*. (For medical and a limited number of regular full-time graduate students in medical basic sciences.) I. 3 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 1 lect., 1 conf.-lab.
345. *Medical Physiology II*. (For medical and a limited number of regular full-time graduate students in basic medical sciences.) II. 4 hr. PR: Physiol. 344 and consent of department chairperson. Continuation of Physiol. 344. 3 lect., 1 conf.-lab.
346. *Neurophysiology*. (For medical and a limited number of regular full-time graduate students in basic medical sciences.) II. 3 hr. PR: College algebra, physics, and consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 2 lect., 1 conf.
347. *Biophysical Analysis*. II. 4 hr. (Alternate Years.) PR: Math. 17 and Physiol. 345 or consent. Systems biophysics, method of analysis, and their application in the quantitative study of biological phenomena. 3 lect., 1 conf.-seminar.
399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate status and consent. (Graded as S or U.)
447. *Systems Biophysics*. II. 4 hr. (Alternate Years.) PR: Physiol. 347 or consent. Quantitative analysis of physiological regulatory systems. 2 lect., 2 conf.-seminar.
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology and biophysics, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology, 3 lect., 3 conf.
497. *Research in Physiology and Biophysics*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1-6 hr. PR: Consent. (Graded as S or U.)

# School of Dentistry

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Dental auxiliary careers such as dental hygiene may be pursued. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

The School of Dentistry of West Virginia University offers programs of education leading to the degrees of Doctor of Dental Surgery, Master of Science with a major in Orthodontics, and Bachelor of Science in Dental Hygiene. One oral surgery internship and two oral surgery residencies are offered by the Department of Oral Surgery. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Three general practice residencies are offered by the School of Dentistry and University Hospital. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by an associate dean, two assistant deans, and the clinical and basic sciences chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of WVU.

## Doctor of Dental Surgery Program

The School of Dentistry offers a program of education leading to the degree of Doctor of Dental Surgery (D.D.S.). The requirements for admission and the curriculum conform to the standards established by the American Dental Association Commission on Accreditation of Dental and Dental Auxiliary Educational Programs.

### Admission

*Application for admission in the Fall of 1979 should be made promptly upon completion of the 1977-78 school year, even if the applicant has not completed all the requirements as listed.*

*The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of*



*Dentistry in the Fall of 1979, is November 1, 1978. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet and thus should be reviewed carefully by the applicant. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.*

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.* Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

Each applicant is required to satisfactorily complete the Dental Admission Test. It is suggested that the test be taken in April, before making application in June, for admission in the Fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisite courses should include:

	<i>Sem. Hr.</i>
English Composition and Rhetoric or equivalent . . . . .	6
Zoology or Biology (with laboratory) . . . . .	8
Inorganic Chemistry (with laboratory) . . . . .	8
Organic Chemistry (with laboratory) . . . . .	8
Physics (with laboratory) . . . . .	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

All applications received from AADSAS are reviewed and those most qualified are required to appear for a personal interview. The Committee on Admissions will advise the applicants of the time and place of the interview.

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements as stated above, appropriate completion of all application instructions, submission of all transcripts from each college attended, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding admission enrollment).

*Final acceptance of a student is contingent upon satisfactory completion of all requirements.*

**Promotion**

At the close of the school year, the status of each student is reviewed by the appropriate Committee on Academic Standards, which then reports to the Dean and the Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat a year, or be suspended from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the Dean and the Faculty Council.

Unconditional promotion normally depends upon the fulfillment of all course requirements, and the attainment of certain minimum standards of academic achievement. These requirements provide for a minimum grade-point average of 1.5 for promotion to the second year; for a minimum cumulative grade-point average of 1.75 for promotion to the third year; for a minimum cumulative grade-point average of 2.0 for promotion to the fourth year; and for a cumulative grade-point average of 2.0 for graduation. Outstanding students may be considered for graduation upon completion of the third summer session.

## Requirements for Degree

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they meet fully the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.
2. Shall have completed the prescribed curriculum for each of the academic sessions.
3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.
4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

Attendance at the spring Commencement is voluntary. If you don't plan to attend, leave the complete mailing address to where you want your diploma mailed at the Dean's office.

## Curriculum

The continual change in the social, economic, and educational structure of our society has led to an acute awareness of personal health needs. Foremost among these changes are population increase, rapidity of communication, and increased life expectancies.

The School of Dentistry recognizes its obligation to produce professionals capable of meeting the dental health needs of society and providing leadership for the dental profession. Therefore, the school offers a curriculum that will provide students with a learning environment in which to develop the technical competence, intellectual capability, and professional responsibility necessary to meet the dental health needs of a society in a state of constant transformation. In order to insure the achievement of these goals, the dental curriculum is continually reviewed and revised.

The basic required courses are presented during the first six semesters and three eight-week summer sessions (three calendar years). The student has the opportunity in the second semester of the first year for early experience to patient oriented instruction through the introduction to community dentistry, oral diagnostic techniques, and the concepts of comprehensive dental care. Student progress is constantly evaluated. Upon completion of the second

# SCHOOL OF DENTISTRY CURRICULUM PLAN

	First Year (1,200 hr.)	Summer Session (320 hr.)	Second Year (1,200 hr.)	Summer Session (320 hr.)	Third Year (1,200 hr.)	Summer Session (320 hr.)	Fourth Year (1,200 hr.)
				Basic Dental Science	Basic Biologic Science	Bio-Clin. Sci. Comm. Dent.	
100		Basic Dental Science	Basic Biologic Science	Bio-Clinical Sciences			
				Comm.Dent.			
200	Basic Biologic Science			Clinical Dentistry	Bio-Clinical Sciences	Clinical Dentistry	
		Bio-Clinical Sciences					
		Clinical Dentistry	Basic Dental Science	Unsched.		Unscheduled Time	
300		Unsched.					
400					Comm. Dent.		
500							
600			Bio-Clinical Sciences				
700	Basic Dental Science				Clinical Dentistry		
800							
900	Bio-Clinical Sciences		Comm. Dent.				
	Comm. Dent.		Clinical Dentistry				
1,000	Clinical Dentistry						
	Unscheduled Time						
1,100			Unscheduled Time		Unscheduled Time		
1,200							Unscheduled Time



semester of the third year of the program, the progress of all students is thoroughly reviewed by the faculty and individual curriculums for completion of the program are designed for each student. It is recognized that dental students have a wide variety of interests and backgrounds. To stimulate, motivate, and satisfy these interests, elective opportunities are offered in the first and second semesters of the fourth year of the curriculum. The number of required hours during the fourth year including electives may vary with each student depending on the individual student's progress at the completion of the third summer session and/or first semester of the fourth year. Students must complete satisfactorily all courses attempted.

### Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and renders a much needed service to several thousand patients annually.

### Books and Instruments

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses.

### Organizations

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*The WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The Association promotes the educational program of the School of Dentistry. Full membership is extended to all graduates of the School, and associate memberships are available to others interested in the aims of the Association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 per cent of each senior class. Candidates are selected from the academically superior 20 per cent.

*Dental Fraternities.* Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were

# SCHOOL OF DENTISTRY COURSE SCHEDULE

First Year	1st Sem.	2nd Sem.	3rd Year	1st Sem.	2nd Sem.	3rd Sem.
300 - Anesthesiology			350 - Removable Prosthodontics (5)			
303 - Oral Diagnostic Techniques			352 - Community Dentistry (6)			
304 - Operative Dentistry (1)			353 - Oral Oncology			
305 - Biochemistry			354 - Community Dentistry (7)			
306 - Gross Anatomy (Trunk & Extremities)			355 - Clinical Pathology Correlation Conference			
307 - Gross Anat. (Head and Neck Neuroanatomy)			357 - Fixed Prosthodontics			
309 - Microanatomy and Organology			358 - Operative Dentistry (5)			
310 - Dental Anatomy and Occlusion			359 - Oral Surgery (2)			
311 - Periodontics (1)			360 - Pharmacology			
312 - Dental Materials			361 - Pedodontics (3)			
313 - Removable Prosthodontics (1)			362 - Endodontics (3)			
314 - Fixed Prosthodontics (1)			363 - Periodontics (3)			
315 - Community Dentistry (2)			364 - Oral Diagnosis (2)			
316 - Removable Prosthodontics (2)			365 - Clinical Orthodontics (1)			
317 - Community Dentistry (3)			367 - Clinical Oral Roentgenology (1)			
318 - Oral Histology and Embryology			371 - Dental Practice Management (2)			
320 - Community Dentistry (1)			372 - Dental Practice Management (Ethics) (3)			
321 - Endodontics (1)			373 - Dental Practice Management (4)			
322 - Operative Dentistry (2)			374 - Principles of Medicine (4)			
323 - Clinic Orientation						
<b>Second Year</b>			<b>Fourth Year</b>			
301 - Microbiology			375 - Dental Practice Management (5)			
325 - Dental Practice Management (1)			376 - Removable Prosthodontics (6)			
327 - Oral Roentgenology			377 - Periodontics (4)			
328 - General Pathology			380 - Endodontics (5)			
329 - Operative Dentistry			382 - Advanced Oral Histopathology (Elective)			
330 - Community Dentistry (4)			383 - Operative Dentistry (6)			
332 - Community Dentistry (5)			384 - Oral Surgery (3)			
333 - Physical Diagnosis (1)			385 - Clinical Orthodontics (2)			
334 - Removable Prosthodontics (3)			386 - Pedodontics (3)			
335 - Pedodontics (1)			387 - Oral Diagnosis (3)			
336 - Fixed Prosthodontics (2)			389 - Fixed Prosthodontics (4)			
337 - Oral Diagnosis (1)			394 - Community Dentistry (8)			
338 - Oral Pathology			395 - Hospital Dentistry (5)			
339 - Oral Surgery (1)			396 - Clinical Oral Roentgenology			
340 - Periodontics (2)			397 - Special Topics*			
341 - Removable Prosthodontics (4)						
342 - Endodontics (2)						
343 - Fundamentals of Physiology						
345 - Principles of Orthodontics						
346 - Orthodontics Technics						
347 - Management of Medical Emergencies (2)						
348 - Operative Dentistry (4)						
349 - Hospital Dentistry (3)						

\*See Courses of Instruction in Dentistry.

conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

## Courses of Instruction in Dentistry

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. See courses 394 and 397. Other University courses may be taken with the approval of the student's adviser and the Assistant Dean for Instruction.

### Community Dentistry

Associate Professor McCutcheon (*Chairman*); Professors Ingersoll and Seime; Instructor Meckstroth.

- 315. *Community Dentistry 2*. II. 3 hr. A course encompassing the study of professional communication and the introduction to the theory and practice of preventive dentistry.
- 317. *Community Dentistry 3*. II. 2 hr. A course covering the principles of human behavior and their application to understanding patient problems, patient management, and dentist-patient communication.
- 320. *Community Dentistry 1*. II. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
- 330. *Community Dentistry 4*. II. 1 hr. Lectures and field experience provide the student with the basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
- 332. *Community Dentistry 5*. S. 1 hr. A course providing lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition and microbiology.
- 352. *Community Dentistry 6*. I, II. 2 hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
- 354. *Community Dentistry 7*. S. 1 hr. A course of lectures covering the origin and development of dentistry.
- 394. *Community Dentistry 8*. I, II. 1-15 hr. Continued field experience in various aspects of community health.

### Dental Anatomy

Associate Professor VandenBosche; Assistant Professors Foor, Kwiatkowski, and Rodeffer.

- 310. *Dental Anatomy and Occlusion*. I. 4 hr. Anatomy of individual teeth, both permanent and primary in regard to form and function and their static and dynamic occlusal relationships.

### Dental Practice Management

Professor Thomas; Associate Professor Puderbaugh (*Chairman*); Assistant Professor Walker; Instructor Hickman.

- 325. *Practice Management 1*. II and S. 2 hr. (Dental Auxiliary Utilization.) Designed through didactic and clinical experience to prepare dental students in the concepts of four-handed dentistry.



371. *Practice Management 2*. Yr. and S. 4 hr. PR: Dent. 325. Fundamentals of practice management, including organization and development of the practice, personnel and financial management, introduction of TEAM dentistry, continuation of clinical practice using auxiliaries, including those trained in expanded functions.
372. *Practice Management 3*. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics as applied to dental practice.
373. *Practice Management 4*. II. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
375. *Practice Management 5*. I, II. 1-2 hr. PR: Dent. 371. Continuation of clinical practice using auxiliaries, including those trained in expanded functions.

#### Dental Materials

Professor Overberger; Associate Professor Gaver; Assistant Professors Rodeffer and Weaver.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Endodontics

Professors Alberico (*Chairman*), Biddington, and Griffin; Associate Professor Skidmore; Assistant Professor Balaban; Instructors Baur, Funderburk, and Pinson.

321. *Endodontics 1*. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
342. *Endodontics 2*. Yr. and S. 1 hr. Minor clinical endodontic procedures which will stress the application of principles presented in Dent. 321.
362. *Endodontics 3*. Yr. and S. 2 hr. PR: Dent. 321, 342. Lectures on rationale, diagnosis, prevention and non-surgical and surgical treatment of diseases of the dental pulp and their sequelae; also correlating and applying the basic biological and basic dental sciences in the treatment of pulp and periapical disease.
380. *Endodontics 4*. I and II. 1-2 hr. Continued clinical endodontics stressing the diagnosis and treatment of endodontic problems.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Hospital Dentistry

Professors Knapp, Sleeth, Waldman, and Welch (*Chairman*).

333. *Physical Diagnosis (1)*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
347. *Management of Medical Emergencies (2)*. S. 1 hr. A course consisting of lectures and demonstrations involving the assessment and treatment of medical emergencies and also the care of the medical risk patient as related to the practice of dentistry.

349. *Hospital Dentistry (3)*. S. 1 hr. A course consisting of lectures on hospital protocol and hospital dentistry as related to the various dental disciplines. The student also has a one-week hospital rotation involving the care of the hospitalized dental patient.
374. *Principles of Medicine (4)*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students assigned to specific hospitalized patients to review their findings with the class.
395. *Hospital Dentistry (5)*. I, II. 1-15 hr. Continued hospital experience (remote site) in the various aspects of care of the hospitalized dental patient.

#### Operative Dentistry

Professor Sausen (*Chairman*); Associate Professors Gaver and Vanden-Bosche; Assistant Professors Chapman, Foor, Frye, Layman, Naylor, Rodeffer, and Weaver; Instructors Dietterick, Gladwin, Jackson, Kelly, and Mason.

304. *Operative Dentistry 1*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Gold inlay technique introduced. Characteristics and treatment of caries emphasized.
322. *Operative Dentistry 2*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Preparation is made for entering clinical activity. Certain fundamentals of pedodontics introduced.
329. *Operative Dentistry 3*. Yr. 3 hr. Initiation of clinical practice with comprehensive examinations and treatment planning of assigned patients. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.
348. *Operative Dentistry 4*. S. 2 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Clinical practice is expanded, and includes a significant number of gold restorations.
358. *Operative Dentistry 5*. Yr. and S. 3 hr. More complex and advanced techniques for clinical practice and new developments throughout the scope of operative dentistry. Clinical practice expanded to provide experience in all classifications of restorative procedures.
383. *Operative Dentistry 6*. I and II. 2-4 hr. Clinical experience course in which additional cases are treated to improve upon efficiency and finesse. Sufficient variety and depth of experience is obtained to reach adequate competence for independent practice of operative dentistry.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Oral Diagnosis and Radiology

Professors Graham (*Chairman*) and Thomas; Assistant Professors Bowers, Pifer, and H. Smith.

303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive oral health care.
327. *Oral Radiology*. I. Yr. and S. 1 hr. Physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.

337. *Oral Diagnosis 1.* Yr. and S. 2 hr. Didactic instruction with further application of diagnostic procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
364. *Oral Diagnosis 2.* Yr. and S. 1 hr. Clinical application of principles presented in Dent. 337.
367. *Clinical Oral Radiology 1.* Yr., S. 1 hr. Clinical application of principles presented in Dent. 303 and 327.
387. *Oral Diagnosis 3.* I and II. 1-2 hr. Continued clinical experience providing opportunities for further independent observation and analysis of clinical problems.
396. *Clinical Oral Radiology 2.* I and II. 1-2 hr. Additional clinical experience in oral roentgenology.
397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Oral Pathology

Associate Professor Bouquot (*Chairman*); Assistant Professor Keyes.

338. *Oral Pathology I.* (For dental students.) II. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
353. *Oral Pathology II.* (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Recognition of benign, malignant, and premalignant lesions with emphasis on biopsy, exfoliative cytology, and other clinical diagnostic procedures.
355. *Clinico-Pathologic Correlation Conference.* (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
382. *Advanced Oral Histopathology.* (For dental students and graduate students, residents and interns.) II. 1 hr. PR: Consent; Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
401. *Special Studies in Oral Pathology.* (For dental and graduate students, residents and interns.) I, II, S. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics or research activities.

#### Oral Surgery

Professor Campbell (*Chairman*); Associate Professor Graves; Assistant Professors King and Oliverio; Special Lecturer Davidson; Visiting Lecturer Wallace.

300. *Anesthesiology.* II and S. 1 hr. Introduction to general anesthesia; lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Pre-medication, toxic effects, and technics of administration are discussed.
339. *Oral Surgery 1.* II and S. 2 hr. Didactic instruction and clinical experience in basic surgical principles as applied to the extraction of teeth, including classification and techniques for the surgical removal of impactions.
359. *Oral Surgery 2.* Yr. and S. 4 hr. Didactic instruction in diagnosis and surgical and adjunctive treatment of diseases, injuries, and defects of human jaws and associated structures. Practical training obtained by assignments in the oral surgery clinic and in University Hospital.



384. *Oral Surgery 3*. I and II. 2-4 hr. Continuation course in oral surgical procedures including additional experience in the hospital environment.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations and clinical applications.

#### Orthodontics

Professor Merow (*Chairman*); Associate Professor Gaston; Clinical Associate Professor Bonello; Assistant Professors Dempsey, H. E. Martin, Tatich, and Wilfong; Visiting Lecturers Caveney, Eckley, Howells, Jarrett, Schindler, and Taylor.

345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
365. *Clinical Orthodontics 1*. Yr. and S. 2 hr. Case analysis, treatment planning, clinical practice, and seminars concerning interceptive, preventive, and adjunctive treatment of malocclusions.
385. *Clinical Orthodontics 2*. I and II. 1-2 hr. Continued clinical management of selected malocclusion problems.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Pedodontics

Associate Professor Nash (*Chairman*) and Johnson; Assistant Professors Fenton, Gwynn, Ruby, and Westfall.

335. *Pedodontics 1*. Yr. and S. 3 hr. Lecture and clinical practice in preventive diagnosis and treatment of dental disease of children, including dental caries, pulpal therapy, appliance considerations, and child management techniques.
361. *Pedodontics 2*. Yr. and S. 3 hr. Lectures and seminars on more advanced problems of children's dentistry including a number of congenital and systemic conditions related to oral health. Clinical practice in areas of child management, interceptive and preventive orthodontics, and applied restorative procedures.
386. *Pedodontics 3*. I and II. 1-2 hr. Additional opportunities for students to reach an adequate level of understanding and experience in pedodontics.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Periodontics

Associate Professor Morrison (*Chairman*); Assistant Professors Hornbrook, Pickle, and Wanker; Instructor Huetter.

311. *Periodontics 1*. S. 1 hr. Histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis and treatment planning. Laboratory instruction on correct periodontal instrumentation.

340. *Periodontics 2.* Yr. and S. 3 hr. Didactic and clinical instruction on diagnosis and treatment of periodontal diseases, including occlusion and selective grinding techniques.
363. *Periodontics 3.* Yr. and S. 2 hr. Didactic and clinical instruction correlating periodontics with all other areas of dentistry with continued clinical diagnosis and treatment of periodontal diseases.
377. *Periodontics 4.* I and II. 1-2 hr. Continued and additional clinical experience in clinical diagnosis and treatment of periodontal disease.
397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Fixed Prosthodontics

- Professors Adams (Emeritus), Bianco (*Chairman*), and Tucker; Assistant Professors Kwiatkowski, Ladwig, and K. Smith; Instructors Metheny and Smith.
314. *Fixed Prosthodontics 1.* S. 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
  336. *Fixed Prosthodontics 2.* Yr. 5 hr. Lectures and laboratory exercises on principles and technics of crown and bridge prosthodontics. Types of dental bridges, their indications, and contraindications.
  357. *Fixed Prosthodontics 3.* Yr. and S. 4 hr. Lectures and procedures employed in clinical practice. Types of dental bridges, their indications, and contraindications.
  389. *Fixed Prosthodontics 4.* I and II. 2-4 hr. Clinical practice of crown and bridge prosthodontics. Emphasis on problems related to diagnosis and construction of more complex dental bridges.
  397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Maxillofacial Prosthodontics

Professor Bianco (*Chairman*); Assistant Professor Kluth and Harper.

397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

#### Removable Prosthodontics

Professors Bianco (*Chairman*) and Somers; Associate Professor DeCounter; Assistant Professor VanRiper; Instructors Harper, Lacy, Queen, and Roth; Visiting Lecturer DiNapoli.

313. *Removable Prosthodontics 1.* I. 3 hr. Lectures and laboratory practice in bio-mechanical requirements of the edentulous patient.
316. *Removable Prosthodontics 2.* S. 1 hr. Lectures and laboratory practice in maxillo-mandibular relationships and occlusion.
334. *Removable Prosthodontics 3.* Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.
341. *Removable Prosthodontics 4.* S. 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.

350. *Removable Prosthodontics 5.* Yr. and S. 4 hr. Lectures and general clinical practice in complete and partial removable prostheses.
376. *Removable Prosthodontics 6.* I and II. 2-4 hr. Continued clinical practice in various and special removable prosthodontic procedures.
397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Advanced Education Programs

The School of Dentistry offers advanced education programs. The Department of Orthodontics offers a program of advanced study leading to the Master of Science degree. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Pharmacology and Physiology and Biophysics. (See pages 34-48 of this *Catalog* or Part 4 of the *Graduate School Catalog*.) The Department of Oral Surgery offers one oral surgery internship and two oral surgery residencies. Three general practice residencies also are offered by the School of Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in the intern and residency programs may be obtained from the Office of the Associate Dean for Advanced Education Programs.

## Orthodontics Program

### Master of Science

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the Master of Science degree. The program requires a minimum of 24 months (two academic years and two summers) of full-time residency in the School of Dentistry, and is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be recommended to the Graduate School for admission. Those applicants approved for admission to the program will be notified soon after January 15.

### Requirements for Admission to Orthodontics Program

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the department all information requested in the department application form.

### Requirements for Master of Science Degree for Students Enrolled in Orthodontics Program of School of Dentistry

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summers) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.



4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 56 credit hours. These include 35 hours of orthodontics courses, a minimum of 9 hours of selected basic science subjects, and a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

### Orthodontics

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.
419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
420. *Cephalometrics*. I, II, S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
423. *Growth and Development*. I, II, S. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
497. *Research*. I, II, S. 1-15 hr.

## Dental Hygiene Program

The Dental Hygiene Program is a Department of the School of Dentistry. The four-year dental hygiene curriculum combines the advantages of both a liberal arts and a professional education. This curriculum format has departed from the conventional, but there is a definite conviction that the inclusion of many disciplines provides greater strength to the program. The educational objectives of the Dental Hygiene Program are:

To prepare individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States. Presently, these services include: observation, recording, prevention, treatment, education, and communication.

To prepare individuals capable of performing the clinical skills delegated to any dental auxiliary (excluding the dental laboratory technician).

To prepare dental hygienists to teach clinical skills and to present didactic information in dental auxiliary education programs.

To prepare individuals capable of performing coordinative and administrative functions in public health and community related areas.

To prepare individuals for the dental hygiene profession who have a keen sense of social awareness and professional responsibility.

To prepare dental hygienists to continue their professional development past graduation through formal training, self-study, and independent thought.

To prepare individuals who have the capability to understand and adapt to new developments and changes in the scientific, sociologic, and practical factors pertaining to health.

To provide the educational foundation for higher education.

Upon completion of all requirements and with the recommendation of the School of Dentistry, the candidate is awarded a bachelor of science degree in Dental Hygiene.

The Dental Hygiene curriculum is structured in accordance with the standards specified for a Dental Hygiene Program by the Commission on Accreditation of the American Dental Association. The program has been fully accredited by this organization since 1965.

## Admission

Students enter dental hygiene as freshmen, and the general admission policies of West Virginia University are followed. The applicant must be a graduate of an accredited high school or preparatory school and have completed one unit of algebra, one unit of geometry, four units of English, biology, and chemistry. Good grades are expected, and applicants should rank in the upper one-third of their graduating class. Particular attention is given to academic achievement in science courses.

The American College Testing Program (ACT) examination is required of high school applicants. A high school counselor can supply information concerning this examination. The Dental Hygiene Aptitude Test is required of every applicant. A brochure with detailed information and instructions about this test is mailed with application materials or may be obtained by writing the American Dental Hygienists' Association, 211 East Chicago Ave., Chicago, IL 60611.

In addition to a special application form for dental hygiene, each candidate for admission is supplied with three standardized reference forms. Each applicant is requested to have these completed by individuals who know them personally, and to have these individuals return the forms directly to the Department of Dental Hygiene.

The personal qualifications, scholastic record, test scores, and recommendation of each applicant are reviewed by the Dental Hygiene Admissions Committee. After reviewing these credentials, the committee may request an interview with the applicant. If this is the case, the applicant is notified by letter of the date, time, and place of the interview.

The competition for entrance into dental hygiene is extremely keen. *Non-residents should recognize that preference is given to West Virginia residents. Only those nonresidents with the highest qualifications will be considered.*

For application materials the applicant should write to the Department of Dental Hygiene, West Virginia University, or the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. Applicants should

apply and complete aptitude tests as early as possible in the year preceding the year admission is desired. Applications are available in September and are not accepted after March 1.

## Promotion

At the end of each semester, the status of each dental hygiene student is reviewed by the Dental Hygiene Committee on Academic Standards. This committee then makes recommendations to the Dean. Final disposition in each case is the prerogative of the Dean and the Chairwoman of Dental Hygiene.

Unconditional promotion normally depends upon fulfillment of all course requirements and the attainment of both a minimum cumulative grade-point average and a minimum science-dental hygiene grade-point average. These minimum grade-point averages are: a 1.50 for promotion to the second year; a 1.75 for promotion to the third year; a 2.0 for promotion to the fourth year; and a 2.0 for graduation. The courses (or equivalents) utilized to calculate the science-dental hygiene grade-point average are:

Chemistry 11	Dental Hygiene 1	Dental Hygiene 154
Chemistry 12	Dental Hygiene 2	Dental Hygiene 155
Anatomy 101	Dental Hygiene 66	Dental Hygiene 168
Pathology 128	Dental Hygiene 85	Dental Hygiene 169
Pathology 129	Dental Hygiene 90	Dental Hygiene 172
Microbiology 26	Dental Hygiene 105	Dental Hygiene 174
Physiology 141	Dental Hygiene 120	Dental Hygiene 202
Pharmacology 160	Dental Hygiene 125	Dental Hygiene 205
Anesthesiology 300	Dental Hygiene 150	Dental Hygiene 206
	Dental Hygiene 152	

Students who do not qualify to be promoted unconditionally may be placed on probation or may be suspended from further studies in the Department of Dental Hygiene. Probationary status implies that the student will be allowed to make up deficiencies or be given an opportunity to repeat a year.

If a student is promoted on probation, the student must reach the required minimum standards specified above. Students on probation who do not obtain these standards will be reevaluated by the Committee.

The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Professional Organizations

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of junior membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

*American Association of Dental Schools.* This association of dental educational institutions and faculties has as its primary purpose to promote and improve dental education. Dental hygiene students may join as student members.



West Virginia University School of Dentistry Alumni Association. Graduates of the Department of Dental Hygiene may join and participate in all activities of the Alumni Association.

#### DENTAL HYGIENE CURRICULUM PLAN

First Year				Second Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>	<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
English 1	3	English 2	3	Anat. 101	4	Physiol. 141	4
P.E. 1	1	P.E. 2	1	Path. 128	2	Path. 129	3
Core A		Chem. 12	4	D. Hyg. 105	2	Pharmacol. 160	3
(Sp. Com. 11 & 12)		D. Hyg. 2	3	Ntrn. 71	3	D. Hyg. 120	1
Core B (Psych. 1)	3	D. Hyg. 85	3	Ed. Psych. 105	3	D. Hyg. 125	4
Chem. 11	4	D. Hyg. 90	3	Microbiology 26	4	Core B (S.A. 1)	3
D. Hyg. 1	2						
D. Hyg. 66	1						
	<hr/> 17		<hr/> 18		<hr/> 18		<hr/> 18
Third Year				Fourth Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>	<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
D. Hyg. 168	1	D. Hyg. 169	1	D. Hyg. 202	2	D. Hyg. 206	2-4
Core A (Elective)	3	D. Hyg. 174	2	D. Hyg. 205	6	Elective	
Ed. Psych. 260	3	Core B	3	Core B			
D. Hyg. 152	1	(Psych. 141 or 164)		(Upper-Division S.A.)	3		
Anest. 300	2	Core A (Electives)	6	Elective			
D. Hyg. 172	2	D. Hyg. 150	2	Maximum	7	Maximum	15
D. Hyg. 155*		D. Hyg. 155*		Minimum	4	Minimum	12
D. Hyg. 154*		D. Hyg. 154*					
					<hr/> 15-18		<hr/> 14-18

\*Year courses – D. Hyg. 155 = 6 credit hours; D. Hyg. 154 = 4 credit hours.

### Courses of Instruction in Dental Hygiene

Associate Professor Ramsey (*Chairwoman*); Assistant Professors Barber, Crystal, Frere, Shoaf, Tskenlis, and Witzenberger; Instructors Graves and Taylor (part-time); School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this *Catalog* or the *WVU Undergraduate Catalog*.)

#### D. Hyg.

1. *Orientation to Dental Hygiene*. I. 2 hr. PR: Enrollment in Dental Hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
2. *Introduction to the Dental Specialties*. II. 3 hr. PR: D. Hyg. 1 or consent. Survey of functions and responsibilities of each of the dental specialties. Emphasis on the role of the dental assistant and dental hygienist in each type of practice.
66. *Technical Expression and Dental Literature*. I. 1 hr. PR: Enrollment in Dental Hygiene. Preparation and uses of professional communication.
85. *Oral Anatomy*. II. 3 hr. PR: Enrollment in Dental Hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.
90. *Oral Histology*. II. 3 hr. PR: Enrollment in Dental Hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.

105. *The Theory and Practice of Prevention*. I. 2 hr. PR: Enrollment in Dental Hygiene. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in Dental Hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in Dental Hygiene. Fundamental principles and techniques of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education*. II. 2 hr. PR: Enrollment in Dental Hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in Dental Hygiene. Basic principles and procedures in oral radiology technics and interpretation.
154. *Clinical Dental Hygiene*. I, II. 4 hr. PR: D. Hyg. 125. Lectures and clinical application of dental hygiene principles and technics.
155. *Expanded Functions*. I, II. 6 hr. PR: Enrollment in Dental Hygiene. Lecture, laboratory, and clinical course covering the materials and technics of restorative dentistry and expanded duties for the dental hygienist.
168. *Periodontics*. I. 1 hr. PR: Enrollment in Dental Hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics*. II. 1 hr. PR: D. Hyg. 168. A sequential course to D. Hyg. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health*. I. 2 hr. PR: Enrollment in Dental Hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in Dental Hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in Dental Hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
205. *Advanced Clinical Dental Hygiene*. I. 6 hr. PR: Senior enrollment in Dental Hygiene. Role of the dental hygienist in an orthodontic practice, pre- and post-operative care of surgical patients, and introduction to research. Students gain clinical experience in both traditional and expanded duties of the dental hygienist.
206. *Advanced Clinical Dental Hygiene*. II. 2-4 hr. PR: Senior enrollment in Dental Hygiene. Continuation of clinical practice experience in dental hygiene procedures.
220. *Special Topics in Dental Hygiene*. I, II. 1-22 hr. PR: Senior enrollment in Dental Hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

# School of Medicine

The School of Medicine began as the College of Medicine in 1902. For ten years this program was affiliated with the College of Physicians and Surgeons of Baltimore, Md. In 1912 the School of Medicine had its formal beginning as an independent school offering the first two years of the medical curriculum. The School of Medicine moved from the Downtown Campus to the Medical Center in 1957 and inaugurated a four-year program in 1960. This coincided with the opening of University Hospital. In 1961, the first M.D. degrees were awarded to 15 students.

In 1945 the School of Medicine established a curriculum in Medical Technology leading to a degree of bachelor of science. The first graduates were awarded a combined degree by the College of Arts and Sciences and the School of Medicine in 1947. The Program of Medical Technology was established in the School of Medicine in 1961. The Division of Physical Therapy was established and accepted its first class of 16 students in 1970. The Division offers the final two years of a baccalaureate program leading to a degree in physical therapy.

West Virginia University Medical Center—Charleston Division, was established in October, 1972, with the affiliation of WVU and the Charleston Area Medical Center. The Charleston Division offers programs for third and fourth-year medical students in a variety of required and elective courses.

West Virginia University School of Medicine—Wheeling Division, was established in 1974. This program is available for many elective opportunities for students in the fourth year.

## Committees

*Advisory and Admissions Committee to Medical Technology:*

Thomas Sodeman, *Chairman*.

*Commencement Convocation:* Alexander V. Fakadej, *Chairman*.

*Dean's Committee to Clarksburg Veterans Administration Hospital:*

John E. Jones, *Chairman*.

*Educational Program Committee:* Howard D. Colby, *Chairman*.

*Executive Faculty:* John E. Jones, *Chairman*.

*General Research Support Allocation:* David Yelton, *Chairman*.

*Internship Advisory Committee:* David Z. Morgan, *Chairman*.

*Liaison to Student Body:* David Z. Morgan, *Chairman*.

*Student Admissions:* Ruth Phillips, *Chairwoman*.

*Academic Standards:* Charles R. Craig, *Chairman*.

*Student Research Convocation:* Wilbert E. Gladfelter, *Chairman*.

*Student Financial Aid:* David Z. Morgan, *Chairman*.

## Degree

The degree of *Doctor of Medicine* (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.



## Combined M.D.-Ph.D. Program

This should be considered only by students who have shown exceptional interest and promise. All of the admission requirements of the School of Medicine and the Graduate School will apply. Specific course requirements and procedures for monitoring progress will be detailed by both schools.

## Admissions

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.

### When to Apply for Admission

Application for admission in August, 1979, should be made beginning June 1 upon completion of the 1977-78 school year. The latest date for filing an application for August, 1979, is November 30, 1978. Applications are considered as they are received; therefore it is highly desirable to apply early. Applicants filing later, as well as applicants who do not have all of the necessary credentials (e.g. New Medical College Admission Test (New MCAT) scores, final transcripts, and letters of recommendation) at the time of applying for admission, lessen their opportunity for admission since the Committee on Admissions begins its consideration of candidates as soon as the applications are received.

### College Credit Required

The applicant should present a broad general education including a major in some field, not necessarily a natural science. The Admissions Committee needs evidence of excellence of academic performance and steady progress toward a goal.

An excess of credit hours or higher degrees does little to offset the disadvantages of low grades in securing admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from the West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Committee on Admissions.

English . . . . .	1 year
Biological Sciences (with laboratory) . . . . .	1 year
Inorganic Chemistry (with laboratory) . . . . .	1 year
Organic Chemistry (with laboratory) . . . . .	1 year
Physics (with laboratory) . . . . .	1 year
Social or Behavioral Sciences . . . . .	1 year

A total of 90 semester hours of work, exclusive of Military Science (ROTC) or Air Force Aerospace Studies (ROTC) and Physical Education, is required.

It is recognized that applicants for medical school may have very diverse undergraduate backgrounds with a variety of majors. While many undergraduate courses, aside from the required prerequisites, might be beneficial in providing additional background for medical school, the choice of such courses should be determined by the academic strengths and weaknesses of the particular applicant.

## Medical College Admission Test

The scores of the New Medical College Admission Test (New MCAT) are used by the Admissions Committee in considering an applicant for admission. For this reason, it is strongly recommended that students take the test in the Spring prior to making application for admission. Delaying the test until Fall, even though all science courses may not have been completed, jeopardizes an applicant's opportunity since no final consideration is given until New MCAT scores are obtained by the Admissions Committee. Information concerning the time and place of the test can be obtained from your premedical adviser or committee. The New Medical College Admission Test is required of all applicants.

## Personal Interview

No applicant is admitted without an interview by the Committee on Admissions. Currently, all residents of the State of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Committee on Admissions. The applicant is notified of the time and place of the interview. Interviews and consideration of applicants begin in September.

## Conditions Following Acceptance

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Committee on Admissions.

It should also be apparent that furnishing or causing to be furnished false information for the purpose of the School of Medicine application constitutes grounds for disciplinary action, including but not limited to expulsion or revocation of the acceptance.

## Admission to Advanced Standing

Increasing numbers of inquiries are being received seeking consideration of enrollment in the WVU School of Medicine with advanced standing. Only a limited number of such requests can be processed. Transfer ordinarily will be considered only at the end of the second year. The applicant must have passed Part I of the National Board of Medical Examiners examination and present certification of good standing in the school from which the student is transferring.

## Examinations and Evaluation of Student Progress

It is the policy of the School of Medicine that the several departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. A Satisfactory (S) or Unsatisfactory (U) designation is formally recorded for each course. In addition, each department files in the office of the Dean a narrative evaluation of the work of each student identifying strengths and weaknesses and suggesting remedial or corrective measures, if appropriate.

In addition to departmental examinations, which help serve as a basis for recording grades in individual courses, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examina-

tion, designed on an interdepartmental basis, may be required as a test of readiness for promotion. National Board of Medical Examiners, Part I, examinations are given as part of the testing of achievement in individual disciplines and are incorporated in the final grade for that course. The student is encouraged to take the complete Part I examination as a candidate for National Board certification near the end of the second year. The Part II examination is required as a comprehensive test in clinical science at the end of the third year and results are incorporated in the final grades for clinical clerkships.

The overall performance of the student on the National Boards will be taken into account by the Academic Standards Committee when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners examination is one mechanism by which a license may be obtained.

## Promotions and Suspensions

The Academic Standards Committee administers the promotions and suspension rules. Exceptions may be made only on recommendation of the committee. The application of rules on suspension is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools. Permission for repetition of work in the School of Medicine may be granted only by the Academic Standards Committee.

1. A student who does not satisfactorily complete at least one-half of the registration hours in any semester is automatically dismissed.

2. No student will be permitted to register for any work of the second or any subsequent year until all courses for the year before have been completed successfully.

3. All courses and all classes at the School of Medicine are graded as Satisfactory (S) or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The S and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

4. Notwithstanding the above rules, a student whose performance has been considered unsatisfactory by the Academic Standards Committee may be required as a condition for advancement or graduation to complete special requirements and/or an extended period of study. Such a requirement or special opportunity may be made available to a limited number of students at the discretion of the Academic Standards Committee.

5. Upon concurrent recommendation of the Admissions Committee, the Academic Standards Committee, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the students' individual needs to complete requirements for the M.D. degree.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.



## Incomplete Courses

The grade of Incomplete (I) is given when the instructor believes the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure unless special permission to postpone the work is obtained from the Academic Standards Committee (University rule). It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses.

## Departure From Scheduled Work

Medical students must register for all prescribed courses for each semester, except by special permission from the Academic Standards Committee of the School of Medicine. This permission is not valid until it has been reported to the Assistant to the Dean of Admissions and Records, Medical Center, for record.

## Honor Code

Students in the School of Medicine agree to abide by the provision of an honor code which requires ethical and moral standards of conduct in all situations.

## Immunizations

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

## University Hospital and Outpatient Clinics

University Hospital and its outpatient clinics opened in the summer of 1960. It is dedicated to the education of students in the multiple disciplines of the health fields and to the advancement of knowledge in the sciences and arts concerned with health and illness.

Specialist services at University Hospital are provided through the staff of the clinical departments of the School of Medicine.

There are also facilities and staff for clinical laboratory service, diagnostic and therapeutic X-ray services, and such special examinations as electrocardiography, cardiac catheterization, and electroencephalography. Emergency facilities are available at all times.

## Organizations

Graduates of the School of Medicine have a *School of Medicine Alumni Association* devoted to the interests of students and graduates and to the encouragement of scientific and professional progress among its members and the medical profession generally.

*Student American Medical Association.* This organization has a chapter among the students of this school. An Auxiliary provides opportunities for student wives to meet and work together.

*Student National Medical Association.* This organization has among its objectives assistance in the recruitment and retention of minority students.

## Lectureships

*Alumni Lectureship.* Annually some outstanding physician is brought to the WVU Medical Center under School of Medicine Alumni Association sponsorship to address the student body.

*Gideon Stanhope Dodds Lectureship.* A periodic lectureship, founded by a group of alumni and friends, honors Dr. Dodds, late professor emeritus of histology and embryology.

## Curriculum Plan

### First and Second Years

The plan of study is directed toward the principles and methodology of the medical basic sciences. However, the basic courses are designed so that the student begins to integrate concepts of patient care.

The student has the opportunity of an additional early exposure to patient-oriented instruction through the introduction to physical diagnosis and community medicine in the first term of the freshman year.

With the recognition that entering medical students have a wide variety of interests and backgrounds, elective opportunities are offered in the basic science years, beginning with the second term of the freshman year. The permissible elective courses or plans of study have broad limits and need not be confined to the Medical Center. The intention is to encourage responsible student initiative.

See Medicine I and Medicine II charts for representative schedules.

### Third Year

A tightly-structured traditional third year gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students will spend part or all of the year in specified clerkships at the Charleston Division of the WVU Medical Center or other affiliated programs as designated by the faculty of the School of Medicine.

### Fourth Year

The fourth year is selective. The student chooses one of three "tracks" and works with advisers at each track to select the individual program. The general track is appropriate for: (1) the student pointing toward family practice, and (2) the student who has not selected a particular speciality interest.

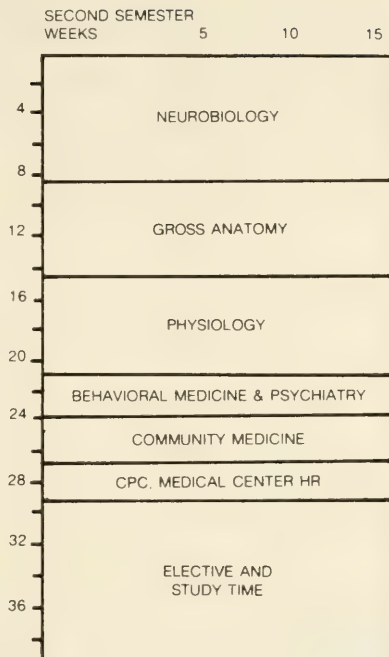
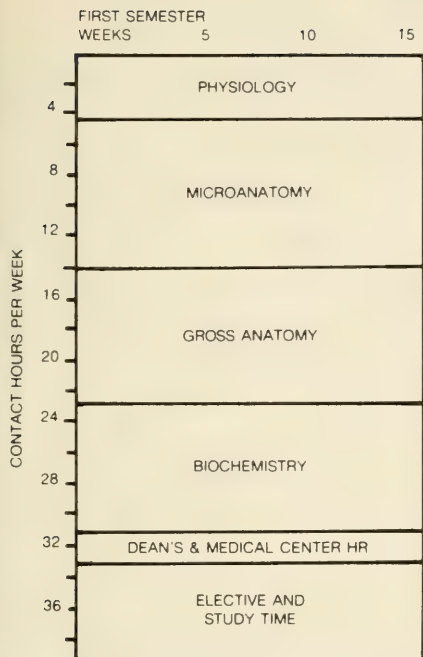
The student chooses a specialty track by department, and may already recognize an attraction to a sub-specialty within that department. The research track offers opportunity to spend much of the fourth year in medical or biological research.

Sixteen of the 44 weeks must be spent in intramural programs. In addition to programs on the Morgantown campus, the programs at the Charleston Division—WVU Medical Center, qualify as intramural. A similar designation for specific programs is in development at the Wheeling Division—WVU School of Medicine and the Veterans Administration Hospital in Clarksburg. A folder is available which lists the approved intramural selective options.

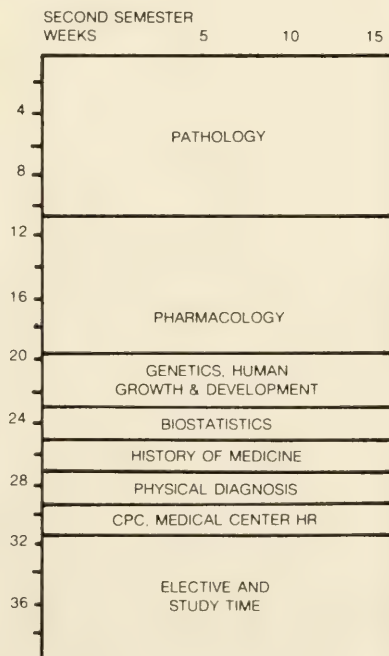
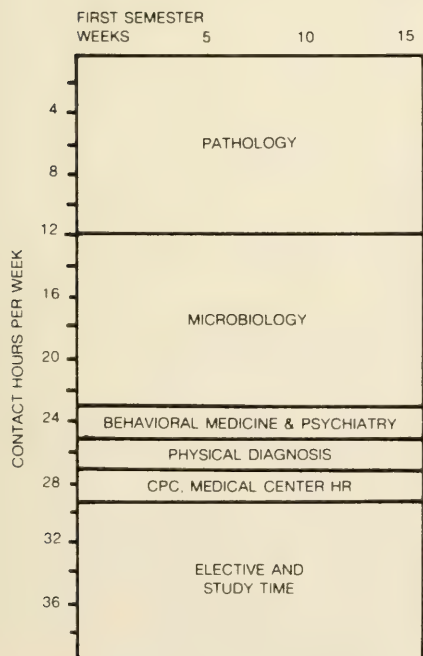
A number of assigned fourth-year students will take all of their clerkships at the Charleston Division of the WVU Medical Center.

The Joint Council of Teaching Hospitals, working with physicians in various communities and the School of Medicine, has developed extramural selective

## MEDICINE I



## MEDICINE II





### MEDICINE III Clerkships

WEEKS

12	MEDICINE
12	SURGERY
12	BEHAVIORAL MEDICINE & PSYCHIATRY
	OBSTETRICS-GYNECOLOGY
12	PEDIATRICS
	NEUROLOGY, PEDIATRICS OPD, ACUTE MEDICINE
48	TOTAL

opportunities at a number of hospitals in West Virginia. Alternatively, the selectives may be spent at a university or university-affiliated hospital.

Every student has the opportunity for 4 weeks of vacation. The student may choose valuable medical experience for vacation time.

A separate booklet lists the extramural in-State electives and provides specific guidelines for the fourth-year curriculum.

**MEDICINE IV**  
**Three Alternative Tracks**

WEEKS	GENERAL	SPECIALTY	RESEARCH
4	VACATION	VACATION	VACATION
12	SPECIAL SELECTIVE ADVISORY GROUP CONCURRENCE	SPECIAL SELECTIVE DEPARTMENT CHAIRPERSON CONCURRENCE	SPECIAL SELECTIVE ADVISORY GROUP CONCURRENCE
8	CLINICAL NEURO SCIENCES, BEHAVIORAL MEDICINE AND PSYCHIATRY, RADIOLOGY OB GYN OR PATHOLOGY INCLUDING CLINICAL PATHOLOGY	DEPARTMENT CHAIRPERSON APPROVAL	ADVISORY GROUP APPROVAL
8	MEDICINE AND/OR PEDIATRICS, INCLUDING SUB SPECIALTY UNITS		
8	SURGERY, INCLUDING SUB SPECIALTY UNITS		
4	ACUTE AND AMBULATORY CARE		
44	TOTAL		

# Courses of Instruction

## Anesthesiology

Professors Knapp (*Chairman*), Burke, and Kennedy; Associate Professors Gutierrez, Martinez, Shoub (part-time), and Smith; Assistant Professors Bellotte, Bettinger, Brady, Entress, Henrick, Hess, Howie, Rajaratnam, and Rick; Research Instructor David; Clinical Professors Reier and Weeks; Clinical Associate Professors Cwik, Graff, Rodman, Tercan, and Zeedick; Clinical Assistant Professors Huber, Kessel, and Lilly.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)
331. *Clinical Clerkship in Anesthesiology or Acute Medicine. (Third Year.)* CR.  
*A. Lectures to Third-Year Students on Topics Related to Anesthesiology.* (Lecture Series is part of Surgery 361.)  
*B. Clinical Clerkship in Acute Medicine.* Clinical Clerks will participate in pre-anesthetic evaluation, systemic anesthesia, monitoring, airway management, respiratory care, fluid and blood therapy, clinical pharmacology, cardiopulmonary resuscitation, pain management, and local anesthesia. Seminars, didactic lectures, journal club, rounds, and clinical experience in the intensive care unit and operating theater will be provided. (Duration: 2 weeks.)
399. *Selective Experiences in Anesthesiology (Fourth Year.)* CR. (See Conjoined Courses.)  
*A. Clinical Anesthesiology.* Participation in all aspects of anesthetic management and care. Operating room, recovery room, intensive care unit, conferences, seminars and rounds. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)  
*B. Intensive and Respiratory Care.* Direct participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)
497. *Anesthesiology Research.* 1-15 hr. Participation in ongoing clinical laboratory projects including: The effects of benzodiazepine derivatives as premedicant, induction and amnesic agents for anesthesia; monitoring techniques in the critically ill; pathophysiology of the airway and lung; biochemical and ultra-structural studies of the metabolism of neurotransmitters from central and peripheral nerves; to learn research techniques; newer methods of physiological measurements in critically ill patients. Computer monitoring in intensive care. Duration: 4-24 weeks. Offered: By arrangement. Max. enrollment: 2.

## Behavioral Medicine and Psychiatry

Professors Spradlin (*Chairman*), Carter, Flink, Hein, Kelley, Morgan, Quarrick, Waldman, and Watne; Clinical Professors Ayd, Bateman, Carruth, Crawford, Rossman, and Schein; Associate Professors Hlusko, Linton, Morgan, Porterfield, Stevenson, and Withersty; Clinical Associate Professors Comer, Edwards, Goodman, Hibbard, Kerns, Moriarty, Panepinto, Rogers, Srebalus, Staples, Wanner, Ward, and Weise; Assistant Professors Brallier, Claude, Clayman, Colvin, Cone, Dryer, Hobbs, Ingersoll, Kommor, Scobbo, Seime, Upthegrove, Walker, and Yazel; Clinical Assistant Professors Allen, Baade, Baranowski, Capage, Dorsey, Dunning, Edelstein, Fawley, Fink, Frampton, Goldberg, Inger, Hoback, Kovacevich, Ledwell, McCauley, McNeer, Portz, Robison, Self, Smith, Smith, and Webb; Clinical Instructors Case, Hunter, Miller, Panepinto, Revell, and Starkey.



311. *Introductory Psychiatry. (First Year.)* 1 hr. Clinical syndromes with discussion of various patterns and defense mechanisms.
321. *Introductory Psychiatry. (Second Year.)* 2 hr. Developmental, interpersonal, and intrapsychic aspects of distorted behavior patterns.
341. *Clinical Clerkship in Psychiatry. (Third Year.)* CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry and participation in diagnosis and treatment of psychiatric disorders.
355. *Behavioral Science and Health Care.* Behavioral science applied to issues related to physical and mental health care. Variety of topics will be considered, such as study of interpersonal roles and games, various cultural "healing" practices, personal and social aspects of illness, family disorganization, and hospitals and related institutions.
399. *Selected Experiences (Fourth Year) in Behavioral Medicine and Psychiatry.* (See Conjoined Courses.)

## Community Medicine

Professors Pearson (*Chairman*) and Mou; Associate Professors Eckert, Hall, Krall, and Merchant; Clinical Professor G. Pickett; Clinical Associate Professors McCoy, Staples, and Wiles; Assistant Professor Ortmeyer; Clinical Assistant Professor Holland; Instructors Hinton and Reger.

312. *Community Medicine. (First Year.)* II. 3 hr. Open to limited number of graduate students. PR: Consent. The determinants of states of health in a community; inter-relationship of demography, economics, sociology and anthropology, environmental and occupational hazards, and the organization of public health and medical care systems.
322. *Epidemiology and Biostatistics. (Second Year.)* II. 2 hr. PR: Consent, medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association and evaluation of medical literature.

## Conjoined Courses

399. *Selective Experiences in Medicine. (Fourth Year.)* I, II, S. CR. PR: Satisfactory completion of first three years of the medical curriculum. (Graded as S or U.) The selective program offers a wide range of opportunities in the basic sciences, medical specialties, and sub-specialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the WVU Medical Center—Charleston Division, WVU School of Medicine—Wheeling Division, and the Veteran's Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans an individual program, with faculty advice. Flexibility is permitted. With consent of instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See intramural and extramural brochure, published annually, describing the selective opportunities.)

## Family Practice

Professors Traubert (*Chairman*), Vazquez, Sleeth and Tulley; Clinical Professors Davis, Flood, Huffman, Jarrett, and Simmons; Associate Professor Carper; Clinical Associate Professor Dunn; Assistant Professor Flaherty and Weisser; Clinical Assistant Professors Burke, Crigger, Dickey, Eckmann, Fullmer, Heslen, Hess, Hofreuter, Merrifield, Reed, Ritz, Sadler, Smith, Stemple, and Sine; Clinical Instructors Howes and Wack.

399. *Selected Experiences in Family Practice. (Fourth Year.)* (See Conjoined Courses.)

## Medicine

Professor Waldman (*Chairman*), M. Albrink, Andrews (Vice President), Bowyer, Flink, Harris (Chairman, Division of Cardiology), Jain, J. Jones (Dean), Lapp, Linsholm, D. Z. Morgan (Associate Dean), W. K. C. Morgan (Chairman, Division of Pulmonary Diseases), Mou (Dean, Charleston Division), Ortel, Point (Associate Chairman), Shane (Chairman, Division of Metabolism-Endocrinology), Sleeth, Spradlin (Chairman, Division of Behavioral Medicine), Taylor, and Welton (Chairman, Division of Dermatology); Associate Professors Kluge (Chairman, Division of Infectious Diseases), Lynch, McIntosh, Merchant, Milutinovich (Chairman, Division of Nephrology), E. Morgan, Pakrashi, Weiss, and Withersty; Assistant Professors Asato, Beall, Bellotte, Boehlocke, Chillag, Colvin, Condry, Crouch, Deglin, DiBartolomeo (Chairman, Division of Rheumatology), Finch, Ganguly, Georgiev, Grubb, Hawley, D. Hendrick, Hobbs, Hodous, Howie, D. Jones, Khakoo, Piccirillo, Rick, Rogers, Scobbo, Shultz, Stratton, Ullrich, and Yazel; Instructors D'Alessandri, Doll, Graham, Gray, A. Hendrick, Martin, Omar, Peters, Seaton, and Swan; Clinical Professors Emeritii Tuckwiller and Whittlesey; Clinical Professors Pfister, Marshall, Saville, Selinger, and Skaggs; Clinical Associate Professors W. T. Anderson, Artz, Avington, Blatchley, Carter, Chvasta, Conley, Davidson, Gaziano, Hartman, Jackson, R. Jones, Koppel, Lewis, McMillian, Nestman, Reiter, Santer, Scherr, Solez, and S. Warren; Clinical Assistant Professors Arnett, Avashia, Basu, Catanzaro, English, Flombaum, Gainer, Glick, Gustke, Hall, Hyde, Jacobs, Jewson, D. Lee, Latos, McConnell, Maxilamani, Mazzocco, Palmer, D. Pearson, Renn, Rhudy, Subbian, H. B. Thompson, C. Warren, and Zaldivar; Clinical Instructors Gomez, A. Lee, Lim, MacCallum, and Spiggle.

321. *Physical Diagnosis. (Second Year.)* Yr. 4 hr. PR: Consent. Examination of normal subjects. Practical experience in history-taking and physical examination of patients.
323. *History of Medicine. (Second Year.)* Yr. 1 hr. Development of the art and science of medicine.
331. *Clinical Clerkship in Medicine. (Third Year.)* CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the several departments. Clerkship in medicine occupies 12 weeks; students at University Hospital spend 2 weeks at Clarksburg VA Hospital.
399. *Selected Experiences in Medicine (Fourth Year.)* CR. (See Conjoined Courses.)

## Neurology

Professors Gutmann (*Chairman*), Chou, Gutrecht, and Martin; Associate Professors Azzaro, Fakadej, and Svoboda; Assistant Professors Crosby, Hobbs, and Ko; Clinical Professor Poffenbarger; Clinical Assistant Professors Morehead and Pratt.

341. *Clinical Clerkship in Neurology. (Third Year.)* CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients and out-patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.

399. *Selected Experiences in Neurology. (Fourth Year.)* CR. (See Conjoined Courses.)

## Obstetrics and Gynecology

Professors White (*Chairman*) and Fugo; Associate Professors Butcher, Cox, Durkin, Hunter, McIntosh, and Sehgal; Assistant Professors Foss; Clinical Professors Bonney, Chambers, and Patchell; Clinical Associate Professors Behnam, Giustini, Grubb, Mairs, Maxson, Palladino, Poole, and Stone; Clinical Assistant Professors Battaglino, Curnutte, D. Georgiev, Greco, Keefer, Kerr, Sims, Stevens, and VanRiper; Clinical Instructor Withersty.

341. *Clinical Clerkship in Obstetrics and Gynecology.* (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students are involved with care of all patients, participating in an essential role in patient care. Experience extends to out-patient clinics in all aspects of obstetrics and gynecology.
399. *Selected Experiences in Obstetrics and Gynecology. (Fourth Year.)* An elective subinternship in obstetrics and gynecology with major responsibility for patient care beyond that provided during the third-year curriculum. Students participate in out-patient and in-patient care with delegation of responsibility commensurate with level of training and ability. Supervision is provided by house officers and faculty. Greater participation in surgical procedures is provided, as well as active participation in complicated obstetrical patients.

## Pediatrics

Professors Klingberg (*Chairman*), B. Jones (*Assistant Chairwoman*), Kelley, and Pomerance; Associate Professors Amato, Eckert, Fakadej, Neal (*Chairman*, Pediatric Cardiology), Phillips, Ross, Svoboda, N. Wanderman, and Wible; Assistant Professors Mullett and Tripp; Instructor Sutherland; Clinical Professors Harrison, Nottingham, Potterfield, and Stabins; Clinical Associate Professors Jakubec, Leslie, Lewine, and Morris; Clinical Assistant Professors Ayoubi, Burech, Crittenden, Hoylman-Ayoubi, Israel, Rhee, Shawkey, and R. Wanderman; Clinical Instructors Majumder, Menchavez, Munoz, Thatcher, Uy, Verma, and Wolf.

314. *Human Growth and Development. (Second Year.)* Basic considerations of embryology, organogenesis, teratology, and other factors influencing intrauterine growth and development and the adaptation of the fetus to extrauterine life.
331. *Clinical Clerkship in Pediatrics. (Third Year.)* CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.
370. *Genetics. (Second Year.)* Introduction to the understanding of genetics and heritable diseases in man.
399. *Selected Experiences in Pediatrics. (Fourth Year.)* (See Conjoined Courses.)

## Radiology

Professors Gabriele (*Chairman*) and Frich; Associate Professors Amtey, Antico, and Hogan; Assistant Professors Ko, Lai, Sinha, Cosmann, Kunst, Elyaderani, and Slack; Instructor Kumar; Clinical Professors Aceto, Butler, Castro, Ellswood, Goodwin, Kennard, and Ozarda; Clinical Associate Professors Hayes, Sexton, Szalontay, Williams, and Yost; Clinical Assistant Professors Barger, Jennings, Koh, Leef, Nagarajan, Smith, and Stupar.



The radiology staff aids in the instruction of students at all levels of the curriculum. They assist in the teaching of topographic anatomy in the first year. The careful interpretation of roentgenograms is an integral part of each clinical service.

101. *Radiology*. Selected experiences in general radiology.
102. *Neuroradiology*. Review of neuroanatomy with respect to application in neuroradiology. Selected experiences in neuroradiology.
103. *Cardiovascular Radiology*. Review of anatomy and embryology. Selected experiences in central and peripheral vascular radiology.
104. *Radiologic Physics*. Application of physics and mathematics to radiology, nuclear medicine, and radiation therapy.
399. *Selected Experiences in Radiology. (Fourth Year.)* CR. (See Conjoined Courses.)

## Surgery

Professors Watne (*Chairman*), Chou, Clark (*Chairman*, Division of Orthopedics), Fox, Gardner, Milam (*Chairman*, Division of Urology), Moran, Nugent (*Chairman*, Division of Neurosurgery), Sprinkle, (*Chairman*, Division of Otolaryngology), Tarnay, Trotter (*Chairman*, Division of Ophthalmology), Veltri, Warden, and Zimmermann; Clinical Professors Bradford (*Emeritus*), Caudill, Dickinson, Easley (*Emeritus*), Gilmore, Hershey, McConnell, McDowell, Miller, Pickett, and Trenton; Associate Professors Colasanti, Cody, Davis, Kandzari, Lass, and Mawhinney; Clinical Associate Professors Bowers, Cather, Ghaphery, Hall, Jacquiss, Kamerer, King, Lane, Lim, Mathias, McCurkey, Mendoza, Malone, Morgan, Roncaglione, Trapp, Voss, and Wiley; Assistant Professors Ashby, Dahlen, Dunker, Fedde, Hrabovsky, Martin, Nally, and Raju; Clinical Assistant Professors Bangani, Bodenheimer, Bryant, Callender, Chicklo, Cipic, Davis, Dickie, Dickinson, Dodd, Durig, Griswold, Ghiz, Hailslip, Hall, Hatfield, Heilman, Hills, Holt, Humphries, Johnson, Kappel, Lee, Lindert, Majestro, Naranjo, Nichols, Oliverio, Paine, Puskin, Reed, Schwarzbart, Stemple, Tekieli, Touma, Whitaker, Wilkinson, and Wilson; Instructors Ellyson, Flowers, Frome, Hutton, Khuri, Mantz, Martin, Nally, Tenick, Sporck, Thompson, and Arkis; Clinical Instructors Cadogan, Linger, Loimil, Moidel, Kassis, Heiskell, and Thrush; Research Associates Cricco, Mazim, Miike, and Lai.

301. *Introduction to Laboratory Animal Experimentation*. I. 3 hr. One lab. Lecture and laboratory course in environmental control, biology, and diseases of laboratory animals. Uses as animal models and techniques of handling, specimen collection, anesthesia, and surgery.
341. *Clinical Clerkship in Surgery. (Third Year.)* CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of house staff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.
399. *Selected Experiences in Surgery. (Fourth Year.)* (See Conjoined Courses.)

# Program in Medical Technology

The Program in Medical Technology is under the administration of the School of Medicine. Students are admitted into the program leading to a bachelor of science degree after the completion of two years of premedical technology in an accredited college or university. The WVU medical technology program is approved by the Council on Medical Education of the American Medical Association. Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP).

The curriculum includes both the premedical technology program, which is offered in the College of Arts and Sciences of WVU and at Potomac State College, Keyser, as well as the medical technology program, which is offered in the School of Medicine.

Courses of the first two years (premedical technology) may be taken in any institution of recognized standing that offers the courses required for admission into the medical technology program.

Since the course of study of the last two years is of a professional nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses which introduce the student to the medical sciences. During the senior year (the second year in the medical technology program) the student receives both didactic instruction and practical experience in the University Hospital laboratories.

The program's primary aim is to provide a strong undergraduate program in medical technology which leads to a Bachelor of Science degree and which provides an educational background acceptable for graduate work in the medical sciences. The purposes are: (1) to provide a program in medical technology which meets the academic standards of the University; (2) to provide medical technologists for clinical, public health, and research laboratories; and (3) to provide an educational background which enables students to prepare for teaching and supervisory positions in medical technology.

A graduate program in medical technology is offered also. A program for ASCP registered medical technologists who desire to complete requirements for a Bachelor of Science degree also is available. (Further information may be obtained by contacting the Medical Technology office.)

## Admission

Application for admission into the junior year (first year in the medical technology program) should be made before the beginning of the second semester of the sophomore year in college. *Students at WVU or Potomac State College are not transferred automatically from the preprofessional course (first two years) to the professional course (third and fourth years). Students are selectively admitted to the program for their final two years of work.*

Application forms for admission to the professional course are obtained from the office of the Assistant to the Dean of Admissions and Records, Medical Center. These forms should be completed and returned to that office no later than February 1, if the student wishes to enter the succeeding first semester classes.

Admission to the third year is on the recommendation of the Admissions Committee to the Dean. A personal interview with the Committee is required. A

minimum grade-point average (over-all and science) of 2.0 is required for admission.

## Admission Requirements

Complete information concerning WVU admission, fees and costs, registration, regulations, etc. may be found in Part 2 of the *Undergraduate Catalog*.

(a) Admission requirements for the first year (premedical technology) are those for the College of Arts and Sciences.

(b) Admission to the third year (medical technology) is based upon two years of college work with a total of 64 hours as follows:

*English*. 6 hours. (Composition and rhetoric.)

*Biological Science*. 8 hours. (General biology or general zoology.)

*Chemistry*. 15-16 hours. (Inorganic chemistry, 8 hours; quantitative analysis, 3-4 hours; organic chemistry, 4 hours.) (Transfer students are required to have a complete course in organic chemistry to include aliphatic and aromatic compounds.)

*Physics*. 8 hours.

*Physical Education*. 2 hours. (University requirements for students taking first two years in residence.)

*Mathematics*. 3 hours. (College algebra.)

*Electives* to complete the required hours and to meet WVU Core Curriculum requirements.

Courses such as bacteriology, parasitology, and anatomy should not be taken until after the completion of the sophomore year. A foreign language is recommended for students who plan to do graduate work.

## CURRICULUM PLAN

### Premedical Technology

First Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Chem. 15-Inorganic . . . . .	4	Chem. 16-Inorganic . . . . .	4
English 1-Comp. & Rhet. . . . .	3	English 2-Comp. & Rhet. . . . .	3
Math. 3 . . . . .	3	Elective . . . . .	3
Biol. 1-General . . . . .	4	Biol. 2-General . . . . .	4
Phys. Educ. 1 . . . . .	1	Phys. Educ. 2 . . . . .	1
Med. Tech. 1** . . . . .	1	Med. Tech. 2** . . . . .	1
	<hr/> 16		<hr/> 16

Second Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Chem 115-Quantitative . . . . .	4	Chem. 131-Organic . . . . .	4
Electives* . . . . .	6-9	Electives* . . . . .	9-12
Physics 1 . . . . .	4	Physics 2 . . . . .	4
Med. Tech 3** . . . . .	3		
	<hr/> 17-20		<hr/> 17-20

\*Electives are to be selected to meet University Core Curriculum requirements.

\*\*Medical Technology 1, 2, and 3 are not required subjects. It is highly recommended that all students take these courses.



## Medical Technology

### Third Year (Medical Technology I)

<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Med. Tech. 100 . . . . .	4	Parasitol. 224 . . . . .	4
Biochem. 139 . . . . .	5	Microbiol. 223 . . . . .	5
Physiol. 141 . . . . .	4	Biochem. 239 . . . . .	4
Elective . . . . .	3	Med. Tech. 101 . . . . .	4
	<hr/> 16		<hr/> 17

### Fourth Year (Medical Technology II)

Students receive didactic and clinical instruction in the University Hospital laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. Students may be required to be "on duty" at irregular hours due to the professional nature of the collegiate program. Likewise, if the student has excessive absences during the senior year, the time loss must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	<i>Hr.</i>
M. Tech. 200—Orientation . . . . .	No Credit
M. Tech. 201—Clinical Microbiology . . . . .	7
M. Tech. 202—Immunohematology and Blood Banking . . . . .	7
M. Tech. 203—Instrumentation . . . . .	2
M. Tech. 204—Clinical Chemistry . . . . .	7
M. Tech. 205—Laboratory Management . . . . .	2
M. Tech. 206—Clinical Microscopy . . . . .	2
M. Tech. 207—Clinical Histopathology . . . . .	2
M. Tech. 208—Clinical Hematology . . . . .	7
M. Tech. 109—Clinical Serology . . . . .	2
M. Tech. 210—Seminar I . . . . .	2
M. Tech. 210—Seminar II . . . . .	2
Total Credit Hours for Senior Year . . . . .	<hr/> 42

## Degree

The degree of Bachelor of Science in Medical Technology is granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Graduate Program in Medical Technology

The WVU Medical Technology graduate program prepares graduate medical technologists for positions either as administrators and teachers in medical technology educational programs, or as supervisors in special areas of the clinical laboratory. The primary objective is to assist in development of knowledge in an area in administration, in education, or a special area of interest selected by the student which may be a special medical laboratory science as the specific area applies to laboratory medicine. Specializations include clinical chemistry, clinical microbiology, hematology, and immunohematology. The specific course work requirements for the master of science degree rests with the graduate adviser in the student's specific area of interest.

*Graduate Committee:* Professors J. Krall, B. Love, H. Mengoli, D. Moore, Jr., N. Rodman, and T. Sodeman.

## Admission

Applicants must have a baccalaureate degree in medical technology from an accredited institution or a baccalaureate degree in an allied field and be a certified medical technologist with the American Society of Clinical Pathologists. The area of concentration in medical technology desired by the student is considered in the evaluation of the undergraduate record as follows:

1. Individuals who desire to do special study in clinical chemistry, hematology, or immunoematology must have completed 8 hours of physics, 3 hours of mathematics, 4 hours of organic chemistry, and 4 hours of quantitative chemistry on the college level.

2. Individuals who desire to do special study in microbiology must have completed 4 hours of organic chemistry and 16 hours of biological sciences.

3. A minimum of one year's experience in a clinical laboratory is required for admission.

Students will be required to make up deficiencies in the above as well as other deficiencies deemed necessary by the adviser.

Applicants must have a minimum undergraduate grade-point average of 2.5 (based on A = 4 grade points) for admission.

Two letters of reference must be on file in the Medical Technology office. One letter should be from the major adviser in the undergraduate college and another from the immediate supervisor of the applicant's present position. An interview may be requested.

Applicants are selected for admission on the basis of scholastic standing, recommendations, and interest in the field of medical technology. The number of applicants accepted is necessarily limited by the available facilities; and in general, applicants with the most experience are considered first.

## Application Procedure

A preliminary application is filed in the Medical Technology office.

Letters of recommendation are sent to the Medical Technology office from two individuals who are familiar with the applicant's ambitions, abilities, and qualifications.

After approval of the preliminary application, the admission procedure is the same as for other programs of the WVU Graduate School.

A personal interview may be required before final admission to the program.

## Course of Study

It is expected that the students who enter the graduate program in Medical Technology will have a goal in mind and a special field of interest in medical technology. The program is tailored to the needs of the student as far as possible. A minimum of 36 semester hours of credit including a research problem is required. The student selects a major area of concentration from either education, supervision, or administration, and a minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunoematology.

A minimum of 12 semester hours of course work in education to include the following is required of all students:

(A). The three following courses are required:

Ed. Psych. 330 – Advanced Educational Measurements . . . . .	3 hr.
Ed. Psych. 320 – Introduction to Research . . . . .	3 hr.
Ed. Found. 320 – Philosophic Systems and Education . . . . .	3 hr.

(B). The student selects *one* of the following:

Health Ed. 305 – Philosophy of Health Education. . . . .	3 hr.
Ed. Psych. 361 – Instructional Systems . . . . .	3 hr.
Ed. Psych. 450 – Psychological Foundations of Learning . . . . .	3 hr.
Ed. Psych. 451 – Principles of Instruction. . . . .	3 hr.
Ed. Adm. 330 – Principles of Education Leadership. . . . .	3 hr.
Ed. Found. 300 – Sociology of Education. . . . .	3 hr.

(C). Ed. Psych. 311 or Stat. 311 (Statistical Methods) is strongly recommended.

Other courses to complete 36 semester hours are selected by the student (with the help of the adviser) in the area of concentration selected by the student. Students may select courses in departments in schools other than the School of Medicine.

All students must complete a minimum of 18 semester hours in a science related to medical technology including Seminar (3 hr.) and Problem Study (6 hr.).

All students must rotate for orientation purposes through all sections of the University Hospital Clinical Laboratories to include microbiology, hematology, chemistry, immunohematology, and histopathology for a minimum of two days in each laboratory or a total of ten days.

In addition, at the discretion of the student's adviser, other requirements in teaching, supervision, and administration may be necessary.

The adviser works out with the student a plan of study for the entire graduate program. This plan is usually made at the end of the first semester of the student's graduate study. A copy of this "plan of study" is signed by the adviser and student and sent to the Medical Technology office to be put in the student's file.

#### Examinations

A final written comprehensive examination in the major and minor interest areas is given approximately one month before the date on which the degree is to be awarded.

An oral defense of the problem is given about one month after submission of the Problem Study in its final form to the Graduate Committee.

#### Requirements for Degree

All requirements for the master of science degree, as outlined in the *WVU Graduate School Catalog*, must be fulfilled. These requirements can be fulfilled in three semesters of full-time work, but ordinarily at least four semesters are required for completion of the degree requirements.

Degree candidates must have a 3.0 grade-point average and must have removed all incomplete grades and deficiencies.

All students must complete a problem study (see M.T. 497).



# Courses of Instruction in Medical Technology

## Medical Technology

### M. Tech.

1. *Orientation to Medical Technology*. I. 1 hr. Principles and practices of medical technology and the role of the medical technologist as a member of the health team.
2. *Orientation to Medical Technology*. II. 1 hr. Continuation of work of M. Tech. 1.
3. *Introduction to Clinical Pathology*. I. 3 hr. Introduces medical terms and illustrates the various aspects of patient care including laboratory diagnostic procedures the student will be doing the third and fourth years.
100. *Medical Technology*. I. 4 hr. Gross and microscopic structure of human body.
101. *Clinical Laboratory Diagnostic Methods*. II. 4 hr. Procedures used in the clinical laboratories.
200. *Orientation*. S. No credit (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics.
201. *Clinical Microbiology*. I, II, S. 7 hr. Lectures and laboratory practice in clinical bacteriology, mycology, and parasitology.
202. *Immunohematology and Blood Banking*. I, II, S. 7 hr. Lectures and laboratory practice in blood banking. Emphasis on procedures required for transfusions, preservation of blood, blood derivatives, and antibody studies.
203. *Instrumentation*. I, II, S. 2 hr. Basic physics and electronics as they apply to laboratory instruments.
204. *Clinical Chemistry*. I, II, S. 7 hr. Lectures and laboratory practice on procedures used in clinical chemistry laboratory. Advanced instruction in specialized technics.
205. *Laboratory Management*. II. 2 hr. Laboratory organization, economics, ethics, and records.
206. *Clinical Microscopy*. I, II, S. 2 hr. Lectures and laboratory practice in urinalysis, gastric analysis, pregnancy tests, and other procedures.
207. *Clinical Histopathology*. I, II, S. 2 hr. Lectures and laboratory practice in preparation of human tissues and organs for gross and microscopic examination.
208. *Clinical Hematology*. I, II, S. 7 hr. Lectures and laboratory practice in clinical serology.
209. *Clinical Serology*. I, II, S. 2 hr. Lectures and laboratory practice in clinical serology.
210. *Seminar*. I, II. 1-4 hr. Each student is required to present at least one seminar on some phase of medical technology.
300. *Seminar*. I, II, S. 1 hr. Student registers for 1 hr. each semester. Seminars include laboratory management, education in medical technology, and timely topics. Minimum of 3 hours of seminars to include all three topics is required.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration. This study is reported in a thesis-style manuscript. For this study and report, the student registers in M.T. 497. Total number of hours earned in M.T. 497 is determined by the student's adviser. As many as 9 semester hours may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M.T. 497 will be counted toward fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M.T. 497.

## Division of Physical Therapy

The Division of Physical Therapy, under the auspices of the School of Medicine, offers the final two years of a baccalaureate program leading to a degree in physical therapy.

The first two years of study may be completed in the College of Arts and Sciences of WVU, or any other accredited institution which offers courses comparable to the admission requirements of the Division of Physical Therapy. To be eligible for a degree a student must complete the final two years of the curriculum at WVU.

Admission to the third year is based upon 62 or more credit hours of study which satisfies the University Core Curriculum requirements and the prerequisites, or their equivalent, of the Division of Physical Therapy. *Registration in the first two years does not automatically assure the student a place in the junior class.* A student will be accepted on a competitive basis and selection will be based on scholastic standing and on those personal characteristics which are desirable in physical therapists.

The student must satisfactorily complete a three-month period of clinical internship before the awarding of the baccalaureate degree. A Certificate of Proficiency in Physical Therapy then will be awarded which entitles the graduate to seek membership in the American Physical Therapy Association and to become eligible for state licensure for the practice of physical therapy. A physical therapist can practice professionally only after having passed the state board examination in the state where employment is desired.

A personal interview with the Admissions Committee is required. Only those students who have at least a 2.60 grade-point average and a 2.75 science average (on a 4.0 scale) and who have completed all the prerequisites of the Division of Physical Therapy will be interviewed. Individuals who do not meet the above requirements but who believe extenuating circumstances justify admission may petition the Admissions Committee for an interview. Reasons why the application should receive special consideration should be clearly stated in the petition.

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.*

The Admissions Committee will advise the applicant of the time and place of the interview.

## Admission to the Professional Program

Official enrollment forms are available at the office of the Assistant to Dean, Admissions and Records, Medical Center, beginning December 1 of each year. Application forms should be returned no later than March 1 in the year admission is desired.

## Academic Standards

### Clinical Education Program

Students must satisfactorily complete the pre-internship clinical education program. During this time students will be expected to defray any and all costs of the program. The Clinical Internship Program is an 18-week program and is

scheduled following the end of the last semester of the senior year. Before the student is allowed to leave for clinical internships the student must: (1) have completed *all* academic requirements of the program satisfactorily; (2) be of good health and have a full health insurance policy which will be in effect the entire 18 weeks of internship; (3) have an active professional liability insurance policy; (4) be prepared to defray the following types of cost: tuition, travel, room and board, and any incidental cost.

### Promotions and Suspensions

Physical therapy students must register for all prescribed courses for each semester, except by special permission from the Academic Standards Committee of the Division. Permission for repetition of work may be granted only by the Academic Standards Committee.

1. No student will be permitted to register for any work of second year until all courses for the preceding year have been completed successfully.

2. If in the opinion of the faculty that work completed in any unit of a course indicates that a student has a serious lack of understanding of that unit a grade of "I" (incomplete) will be submitted for that student. This may occur even though the student has an acceptable average of all units for the course. It is the student's responsibility to consult with the instructor about the means and schedule for removing incomplete grades.

3. A student who does not assume the responsibility for removing incomplete grades, or who fails to so do in a satisfactory manner, will be given an "F" for the course and will not be permitted to register for advanced courses.

4. No student will be permitted to register for clinical internships (P.T. 290) until all other courses have been satisfactorily completed.

5. Notwithstanding the above rules, a student whose performance has been considered unsatisfactory by the Academic Standards Committee may be required, as a condition for advancement or graduation, to complete special requirements and/or an extended period of study. Such a requirement or special opportunity may be made available at the discretion of the Academic Standards Committee. In addition, the Division of Physical Therapy reserves the right to suspend any student who does not perform at an overall level considered satisfactory for patient care.

6. A student who has been suspended may apply to the Admissions Committee of the Division for readmission.

### Curriculum Plan

This curriculum is designed to satisfy the course requirements for admission to the professional portion of the curriculum in Physical Therapy offered by the School of Medicine. The Core Curriculum requirements must be satisfied, and a total of 62 hours is required for admission to the first professional year. This suggested curriculum plan allows latitude in career choice and is basically compatible with various curricula in the arts and sciences.



First Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
English 1 . . . . .	3	English 2 . . . . .	3
Psych. 1** . . . . .	3	Psych. 2** . . . . .	3
Chem. 15** . . . . .	4	Chem. 16** . . . . .	4
Phys. Ed. 1 . . . . .	1	Phys. Ed. 2 . . . . .	1
Electives* . . . . .	6	Electives* . . . . .	6
	<hr/> 17		<hr/> 17

Second Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Physics 1** . . . . .	4	Physics 2** . . . . .	4
Biol. 1** . . . . .	4	Biol. 2** . . . . .	4
Psych. 141** . . . . .	3	Psych. elect.** . . . . .	3
Stat. 101** . . . . .	3	Sp. Com. 11** . . . . .	3
Electives* . . . . .	3	Electives* . . . . .	3
	<hr/> 17		<hr/> 17

Third Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Path. 128 . . . . .	2	Anat. 102 . . . . .	3
Anat. 101 . . . . .	4	Anat. 208 . . . . .	2
Anat. 103 . . . . .	2	P.T. 110 . . . . .	3
Physiol. 241 . . . . .	4	P.T. 112 . . . . .	3
P.T. 111 . . . . .	5	P.T. 114 . . . . .	2
P.T. 113 . . . . .	1	P.T. 116 . . . . .	1
	<hr/> 18	P.T. 118 . . . . .	3
			<hr/> 17

Fourth Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
P.T. 271 . . . . .	4	P.T. 270 . . . . .	3
P.T. 273 . . . . .	3	P.T. 272 . . . . .	2
P.T. 275 . . . . .	3	P.T. 274 . . . . .	4
P.T. 277 . . . . .	3	P.T. 276 . . . . .	3
P.T. 279 . . . . .	4	P.T. 278 . . . . .	5
P.T. 281 . . . . .	1	P.T. 282 . . . . .	1
	<hr/> 18		<hr/> 18

Summer	
	<i>Hr.</i>
P.T. 290 . . . . .	1-6

\*Suggested electives: Foreign Language (6 hr.); Math. 3, 4; Logic; Bus. Law 111; Psych. 164, 242, 281, 282; Biol. 266; Finan. 114, 150.

\*\*Courses required for admission to Division of Physical Therapy. Chem. 15 and 16 are recommended because they are basically compatible with other curricula.

## Courses of Instruction in Physical Therapy

(Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section.)

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal and neuromuscular systems including bio-mechanics, principles of movement, and analysis of muscle and joint action. Abnormal function due to physical disabilities and pathological disturbances. Students study normal human development and maturation through laboratory sessions involving evaluation and observation of children ranging in age from newborn to 5 years.
111. *Physical Therapy Principles and Physical Agents*. I. 5 hr. Lecture-laboratory introduction to physical therapy and general orientation to the patients. Safety procedures, gait training and nursing procedures related to physical therapy are presented. The course also consists of lecture and laboratory orientation to theory and application of hydrotherapy, thermotherapy, cryotherapy, actiontherapy, massage, and ultrasound.
112. *Pulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, pathology, and treatment of pulmonary conditions. Laboratory in pulmonary evaluations and respiratory treatment procedures. Lectures and case presentations in medicine and surgery concerning chest and thoracic conditions.
113. *Psychiatry*. I. 1 hr. Psychiatric disorders and application of physical therapy to specific conditions. Theories and psychosocial aspects of aging.
114. *Medicine and Neurology*. II. 2 hr. Lectures and case presentations in medicine including GI, hematology, endocrinology, dermatology, physiology of aging, and infectious diseases. Orientation to neurology and neurological disorders.
116. *Clinical Education I*. II. 1 hr. The physical therapy department, equipment, and procedures. Students observe patient treatment by experienced therapists and perform basic treatment procedures under direct supervision.
118. *Basic Therapeutic Exercise*. II. 3 hr. This course includes the application of principles and techniques of traditional forms of anaerobic and aerobic exercises and goniometry. Isotonic, isometric, and isokinetic exercises are presented with an emphasis on the understanding of human cardiopulmonary functions under the stress of motor activity. Laboratory work in the application of basic exercises and pertinent cardiopulmonary stress tests is included.
270. *Organization and Management*. II. 3 hr. Basic principles and philosophy of organization and management. Emphasis on budget planning, scheduling, records, ethics and legal aspects of practice, personnel policies, and leadership.
271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures. Basic principles and actual clinical experience with patients offered in electromyography, including nerve conduction and needle insertion studies.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound patient.
273. *Physical Evaluation*. I. 3 hr. Principles and techniques of performing evaluation testing procedures within the scope of the physical therapist, including manual muscle testing, neurological and ADL evaluations.
274. *Orthopedic Physical Therapy*. II. 4 hr. Selected lectures and cases in orthopedics. Emphasis on effects and treatment of disease and injury to musculo-skeletal and neuromuscular systems. Laboratory practice in orthopedic assessment and procedures, including manipulation techniques.

275. *Professional Literature and Research*. I. 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in the allotted time.
277. *Professional Communications*. I. 3 hr. Acquaints the student with various forms of communication — oral, visual, and written — and their value, function, and application to medical social fields. Emphasis on the physical therapist as a teacher. Students develop skill and techniques in the facilitation of learning, objective writing, and evaluation in both clinic and didactic settings. Students are required to demonstrate such skills to peer groups, faculty, staff, and other health related personnel.
278. *Correlative Rehabilitation*. II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise*. I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and functional anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise and methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.
281. *Clinical Education II*. I. 1 hr. Continuation of P.T. 116. The student's participation in treatment programs is increased and enlarged to include rehabilitation techniques and basic testing and evaluation procedures.
282. *Clinical Education III*. II. 1 hr. Supervised experience in more specialized procedures and testing techniques and inpatient program design.
290. *Clinical Education IV*. S. 1-12 hr. Three summer affiliations of six weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health.



# School of Nursing

The faculty believes that man is a physiological, psychological, and social being capable of rational thought and action. Throughout the life span, man systematically progresses through developmental stages and continually strives to meet basic human needs in a uniquely patterned way. Within the context of the sociocultural background, man perceives and responds to stimuli as an integrated whole. Basic human integrity is maintained throughout the process by dynamic continuous interaction with the environment.

Man is a member of innumerable systems within a total society which is organized to meet needs identified by its people with the family being the primary system for meeting social and health needs. To substitute for or assist the family in meeting the health needs of its members, society organizes health care systems. Each individual has the right of access to those resources which will assist in the attainment and maintenance of optimal states of health.

In man, health is a dynamic state of being which constantly fluctuates between varying degrees of illness and wellness. Since man is an integrated being, the individual's state of health embodies physiological, psychological, and social dimensions. The optimal state of health which an individual can attain and maintain is unknown but is influenced by genetic endowment, the environment, and the ability to cope with actual or potential stressors.

Nursing shares with other disciplines the overall purpose of the health care system in assisting the client to attain, regain, and retain optimal health. Specifically, the purpose of nursing is to assist the client in the performance of those activities contributing to optimal health (or a peaceful death) that the individual or family would normally initiate and perform unaided if they had the necessary strength, knowledge, and motivation. The practice of nursing embodies the holistic concept of man which is derived from a synthesis of knowledge of the humanities and biological and behavioral sciences. From this conceptual base, the nurse develops and applies technical, interpersonal and intellectual skills in assisting individuals, families, and community groups meet health needs.

The faculty believes that learning is a life-long active process, one which is favored by a climate of personal acceptance of the learners as integrated beings with their own internal motivation, attributes, dignity, and worth. Learning is also a progressive and cumulative experience resulting in changed behavior which becomes useful in subsequent learning situations.

The teaching-learning process includes opportunities for teacher-student interaction in setting goals, selecting and evaluating learning experiences, and in appraising instructional methods and student progress. The process of education takes place in an atmosphere characterized by a democratic spirit in which students and faculty can share learning experiences. Such climate encourages the development of intellectual curiosity, systematic inquiry, the capacity for self-direction and a sense of commitment to continued learning to the end that the individual may become an informed, participating citizen responsible for contributing to the improvement of the profession and society through creative efforts.

## Admission

To qualify for admission to the School of Nursing a candidate must have completed one year of prescribed courses in an accredited college or university;

the program within the School of Nursing then consists of one summer session and three academic years.

A minimum grade-point average of 2.5 is required. Students whose grade-point average falls between 2.3 and 2.5 may petition in writing to the admissions committee for special consideration. Such a petition should clearly state the reasons why the application should receive special consideration. A dominant factor in the number of students admitted is the limitation of space. *Since West Virginia University is a State university, no more than 10 percent of those students admitted may be from out-of-state.*

Application for admission to the School of Nursing should be made January 1 of the year the candidate wishes to be admitted. These may be presented in person or mailed directly to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. An application fee of \$10.00, payable to West Virginia University, must accompany the completed application.

### Transfer Students

A student from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum, except for courses in Orientation to Nursing. Application for transfer students should be initiated by January 1 in order to allow time for evaluation and processing of credentials. Deadline for receipt of transcripts is March 1. Apply to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

### Registered Nurse Students—Morgantown and Charleston

#### Academic Program

The School of Nursing offers graduates of diploma and associate degree nursing programs the opportunity to complete requirements for a baccalaureate degree in nursing on the Morgantown campus and at the Charleston Division of the WVU Medical Center. General education credits earned in any accredited college or university may be applied toward the fulfillment of the degree requirements if the course work is comparable.

The registered nurse applicant is admitted directly to the School of Nursing. Acceptance and placement is dependent upon the academic record and upon the number of spaces available in the program.

Application information and forms may be obtained by writing to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. All items indicated on the application forms must be completed in order for the applicant to be considered for admission. These materials include: application form and fee, nursing school and/or college transcripts, evidence of West Virginia licensure (or pending licensure), evidence of malpractice insurance coverage, and ACT, SAT, or other college entrance scores, if available. An application fee of \$10.00, payable to West Virginia University, must accompany the completed application.

Fifteen to 18 hours, or equivalent, of general education (Core) courses are prerequisites for Nursing 99 (Basic Concepts in Professional Nursing.) Any distribution and/or combination from the following list is appropriate: English 1 and 2, 6 hours; Chemistry, 6-8 hours; Introductory Psychology, 3 hours; Introductory Sociology, 3 hours; Anatomy, 3-4 hours; Physiology, 3-4 hours; Microbiology, 3-4 hours; Pharmacology, 3-4 hours; Nutrition, 3 hours.

Additional Core A, B, or elective credit prior to enrolling in Nursing 99, is advised. One semester of chemistry is required. The second semester may be

waived if the applicant has successfully completed comparable laboratory science courses and meets other science requirements (anatomy, physiology, microbiology, and pharmacology). Additional physical and behavioral sciences may be required based on the judgment of the adviser upon review of the student's background.

All registered nurse students are required to enroll in Nursing 99. Upon completion of that course, each student, in collaboration with the faculty adviser, will design a plan for completion of the curriculum in accord with her career goals. Graduates of associate degree programs transfer 18 hours of lower-division nursing credit. Graduates of diploma programs must establish 18 hours of lower-division credit by comprehensive challenge examination.

Upon successful completion of Nursing 99, and the establishment of lower-division credit when applicable, the registered nurse student is eligible for the advanced placement experiences. This experience is a conceptual approach to the challenge of the junior courses. During this experience a diagnostic and prescriptive analysis of the learning needs of the individual student is made. This diagnosis forms the basis for the plan of progression through the remainder of the upper-division courses. Upon successful completion of the advanced placement experience the student may choose either to enroll in junior courses or senior courses plus Nursing 170. The student who is unsuccessful in the advanced placement experience enrolls in the junior courses. All prerequisites to the senior courses must be met before advancement to the senior nursing courses.

A minimum of 20 hours of upper-division courses must be taken by enrollment.

Credit for all courses must be established by enrollment or by advanced placement.

#### Academic Standards and Graduation Requirements

The student must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) maintain an annual grade-point average of 2.0 or better in all nursing courses; and (3) pass all required courses.

A student who fails to meet the requirements listed above must present to the adviser an acceptable plan for meeting the requirements. This plan must be within the policies and standards set by the Committee on Academic Standards.

All students are required to take the National League for Nursing achievement examinations in the respective areas at the completion of their senior-level experience in Maternity Nursing, Nursing of Children, Medical-Surgical Nursing, Psychiatric Nursing, and Community Health Nursing. The student pays approximately \$10.00 for the entire series.

The degree of Bachelor of Science in Nursing (B.S.N.) is conferred upon completion of a minimum of 129 hours.

#### Non-Credit Continuing Education Program

The School of Nursing offers a comprehensive state-wide continuing education program for nurses desiring to enhance their contributions to the health care of patients and clients through self development activities. This is made possible through a variety of ongoing workshops, seminars, conferences, training programs, mini-courses, and telelecture courses. The telelecture courses are implemented via a two-way amplified telephone system connecting hospitals throughout the state with the School of Nursing broadcasting station where the



courses emanate. All educational offerings are approved for Continuing Education Units (CEU) and are a minimum of five contract hours. An individual record of CEUs awarded is maintained by the Division of Off-Campus Credit and Continuing Education and is available to participants upon request. General announcements of educational offerings are published annually with specific program information provided during the interim period. Participant's fees vary according to the educational offering and are assessed at the time of registration.

Announcements of educational offerings may be obtained by contacting the School of Nursing.

### **Fees, Expenses, Housing, Transportation**

Students registering pay the fees shown in the WVU Medical Center fees charts, plus special fees and deposits as required. Fees are subject to change without notice.

Expenses of students attending WVU vary widely according to course of study and their individual tastes.

Students are expected to provide their own equipment and instruments for the clinical courses.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Basic Sciences Building, West Virginia University, Morgantown, WV 26506. Telephone 304/293-3706.

For information concerning University and privately owned off-campus housing, write or call the University Housing Office, 440 Medical Center Dr., Morgantown, WV 26506. Telephone 304/293-3621.

Students are responsible for providing their own transportation for clinical nursing experiences throughout the undergraduate and graduate programs.

### **Curriculum**

The curriculum is predicated on the assumption that nursing like other bodies of knowledge can be best learned in a program which builds breadth and depth through successive contacts with subject matter of learning complexity. It recognizes the need for a shifting focus as the student moves from the introduction to nursing as an art and a science through understanding of common concepts from nursing and general education and, later, specific aspects of nursing care, on into the phase on internalization and integration of nursing knowledge and skill. Concomitant with this progression, the student undergoes a series of role changes from the initial introduction to the role of student, through the role as an observer-participant in the nursing process, on into the final transition which prepares the student to accept the role of a beginning practitioner in nursing.

First Year		Second Year	
	<i>Hr.</i>		<i>Hr.</i>
Core Group A . . . . .	3	Pcol. 160 <sup>c</sup> . . . . .	3
Chem. 11, 12 <sup>c</sup> . . . . .	8	Anat. 101 <sup>c</sup> . . . . .	3-4
English 1, 2 . . . . .	6	Physiol. 101 <sup>c</sup> . . . . .	3-4
P.E. 3 & General Program . . . . .	2	Micro. or Bact. <sup>c</sup> . . . . .	3-4
Psych. 1 & S.A. 1 <sup>b</sup> . . . . .	6	Nsg. 16 . . . . .	4
Core A or Elective . . . . .	6	Nsg. 17 . . . . .	1
Nsg. 3 . . . . .	1	Nsg. 19 . . . . .	5
		Nsg. 20 . . . . .	3
		Nsg. 34 . . . . .	3
		Nsg. 70 . . . . .	2
		Nutrition 71 <sup>c</sup> . . . . .	3

<sup>b,c</sup>Contributes to Core Group B, C, respectively.

Summer Between Second and Third Year		Either Third or Fourth Year	
	<i>Hr.</i>		<i>Hr.</i>
Nsg. 110 . . . . .	6	Core A . . . . .	3
		Core B . . . . .	6
		(3 hr. Psych. or Sociol.)	
		Electives or Core A . . . . .	6

Third Year		Fourth Year	
	<i>Hr.</i>		<i>Hr.</i>
Nsg. 120 . . . . .	5	Nsg. 201 . . . . .	3
Nsg. 130 . . . . .	3	Nsg. 211 . . . . .	2
Nsg. 140 . . . . .	2	Nsg. 220 . . . . .	4
Nsg. 150 . . . . .	4	Nsg. 230 . . . . .	2
Nsg. 160 . . . . .	3	Nsg. 240 . . . . .	2
Nsg. 170 . . . . .	2	Nsg. 250 . . . . .	2
Nsg. 216 . . . . .	3	Nsg. 260 . . . . .	2
		Nsg. 271 . . . . .	3
		Nsg. 291 (Special Topics) . . . . .	1-6

#### Substitution for Required Courses

A student who wishes to substitute another course for any prescribed in the curriculum or required for the degree toward which the student is working must obtain permission for such substitution from the committee on admission and progression.

## Master of Science in Nursing

The School of Nursing offers a program leading to a degree of Master of Science in Nursing (M.S.N.). The four-semester sequence program focuses on primary care for the preparation of the primary nurse clinician who is a generalist capable of adapting the nursing practice to whatever setting, age, or health condition the client's situation dictates. The role of a self-directed primary nurse clinician includes: (1) assessing the health status and health needs of individuals, groups, and communities in order to provide and evaluate quality nursing care; (2) participating as an agent in the decision-making process influencing the present and future health care systems; (3) analyzing research findings and applying these to the improvement of nursing practice; (4) identifying the emerging theories in nursing; and (5) asserting independence for personal development.

The degree requires a minimum of 41 hours of graduate courses. A core of nursing and cognates, culminating in a final semester clinical practicum and a master's thesis or paper, is required of all students.

Degree requirements must be completed within a five-year period. This period begins at the initial enrollment for graduate credits. Candidates who are unable to meet this requirement must submit, in writing, a petition to the graduate faculty of the School of Nursing subject to the approval of the Dean of the Graduate School.

### Admission Requirements

The applicant must meet the admission requirements of the Graduate School of West Virginia University.

The applicant must have completed a baccalaureate program in nursing which is accredited by the National League for Nursing. Applicants from unaccredited baccalaureate nursing programs will be considered on an individual basis. Elementary Statistics is a prerequisite.

The following are required of each applicant:

- a. Personal interview.
- b. Evidence of a current professional nursing licensure in at least one state.
- c. Nursing liability insurance.
- d. A letter of recommendation from each of the following: head of undergraduate nursing school, employer, and a colleague.
- e. Statement of professional goals.

Preference is given to an applicant with:

- a. An undergraduate grade-point average of 3.0 (B) or better (A=4.0).
- b. At least one year of professional experience.

### Admission Procedure

Application for admission to the Graduate School must be made on a standard form obtainable from the Office of Admissions and Records, West Virginia University, Morgantown, WV 26506. Application is to be returned to that office. (An applicant must be approved for a graduate program in order to be admitted to the Graduate School.)

A supplementary form will be sent to the applicant to be returned to the Chairperson, Graduate Level, School of Nursing, West Virginia University, Morgantown, WV 26506.

The Office of Admissions and Records will notify the applicant of the actions taken.

### Degree Requirements

Completion of 41 semester credit hours.

Achievement of an overall academic average of B (3.0) or better (A = 4.0) in all work attempted in graduate school.

A master's thesis or a master's paper is required of all candidates.

Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

Removal of all conditions, deficiencies, and incomplete grades is necessary.

Students are expected to register for courses with letter grades (A, B, C), with the exception of electives which the student may opt to take with Satisfactory (S) or Unsatisfactory (U) grades, subject to the approval of the adviser.



## Curriculum Plan for a Master of Science in Nursing Degree

(A Minimum of 41 Semester Hours)

All students will be expected to take the following courses:

A. Clinical Nursing (24 semester hours)	<i>Hr.</i>
Nsg. 300—Primary Care Nursing . . . . .	3
Nsg. 301—Nursing Intervention: A Social Process . . . . .	3
Nsg. 302—Nursing and the Health Care System . . . . .	3
Nsg. 310—Health Assessment in Primary Care Nursing . . . . .	3
Nsg. 311—Primary Care Nursing Practice . . . . .	3
Nsg. 312—Nursing Role Reconsidered . . . . .	3
Nsg. 400—Clinical Practicum . . . . .	3
Nsg. 491—Advanced Study . . . . .	3-6
B. Nursing Research (4 semester hours)	
Nsg. 370—Theories in Nursing . . . . .	2
Nsg. 373—Nursing Research: Process and Methods . . . . .	2
C. Cognates (10 semester hours)	
Physiology Course . . . . .	4
Sociology Course . . . . .	3
Educational Psychology Course . . . . .	3
D. Elective . . . . .	3

### Typical Four-Semester Program

<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Nursing 300 . . . . .	3	Nursing 301 . . . . .	3
Nursing 310 . . . . .	3	Nursing 311 . . . . .	3
Nursing 370 . . . . .	2	Nursing 373 . . . . .	2
Physiology Course . . . . .	4	Sociology Course . . . . .	3
	<u>12</u>		<u>11</u>
<i>Third Sem.</i>	<i>Hr.</i>	<i>Fourth Sem.</i>	<i>Hr.</i>
Nursing 302 . . . . .	3	Nursing 400 . . . . .	3
Nursing 312 . . . . .	3	Nursing 491 . . . . .	3
Educational Psychology Course . . . . .	3	Elective . . . . .	3
	<u>9</u>		<u>9</u>

## Courses of Instruction in Nursing\*

### Nursing

Nsg.

3. *Orientation to Nursing.* I. 1 hr. Introduction to philosophy and responsibilities of professional nursing and role of the professional nurse.
16. *Life Process.* I. 4 hr. PR: Psych. 1, S.A. 1 and/or consent. The physical and psychosocial development of the individual within a nuclear family. Emphasis on: (1) interaction of individuals at various stages of development within the family milieu and (2) family developmental tasks.

\*Courses of Instruction are under review and subject to modification as the conceptual framework of the curriculum develops.

17. *Family Study Practicum*. (Yr. Course.) 1 hr. PR: Consent. An opportunity to apply the concepts of "family" from Nsg. 16 and "health guidance" from Nsg. 19 to a selected well-family. Structured conferences correlated with scheduled family visits.
19. *Dynamics of Nursing*. I. 5 hr. An integrated course introducing concepts basic to professional nursing. Deals with health promotion and maintenance to all age groups in various settings. Includes introductory clinical nursing experience.
20. *Nursing of the Adult in Health and Illness*. II. 3 hr. PR: Nsg. 16, 17, 19. Integrates basic nursing concepts relating to pathogenesis, physiologic changes and nursing problems resulting from immobilization and surgical intervention. Clinical experiences are in various health care settings with emphasis on maintaining or restoring maximum health.
34. *Maternal-Child Health Nursing*. II. 3 hr. PR: Nsg. 16, 17, 19. Integrates basic nursing concepts relating to care of children and women during the normal maternity cycle including factors which predispose to congenital and hereditary defects. Clinical experiences are in various health care settings.
70. *The Nurse in Western Culture*. II. 2 hr. Evolution of modern nursing with emphasis on ethical and legal problems confronting the nurse.
99. *Basic Concepts of Professional Nursing*. I, II, S. 6 hr. PR: Nursing licensure. Focuses on man (family) related to life cycle, stress adaptation, deviations from wellness. Clinical application of nursing theory stresses interrelatedness of health problems, scientific inquiry and interpersonal processes. Students are assisted to identify career goals.
110. *Basic Concepts of Disease*. S. 6 hr. PR: Nsg. 20, Nsg. 34 or consent. Facilitates the transition from generalities of the sophomore curriculum to the specifics of junior curriculum in relation to interaction of man's psychological, physical, social, and spiritual self. Instruction, experiences, and skill development in classroom and hospital setting.
120. *Nursing the Physically Ill Adult*. I, II. 5 hr. PR: Nsg. 110 or consent. (Conjoined with Nsg. 130.) Study of the patho-physiologic adaptation to illness of the adult with psychosocial concepts integrated. Clinical experience emphasizes nursing care as necessitated by specific adaptive response and the therapeutic management.
130. *Nursing of Children*. I, II. 3 hr. PR: Nsg. 110 or consent. (Conjoined with Nsg. 120.) Study of pathophysiologic adaptation of children to illness with psychosocial concepts integrated. Clinical experience emphasizes nursing care of infants and children as necessitated by specific responses and the therapeutic management.
140. *Maternity Nursing*. I, II, S. 2 hr. PR: Nsg. 110 or consent. Concepts, principles, and clinical experience in maternity nursing. Focus is on normal labor, delivery and puerperium, and the normal neonate. Particular emphasis is placed on normal process of labor and delivery and intrapartum nursing care. Laboratory experiences provide opportunity to identify and meet the nursing needs of childbearing families.
150. *Psychiatric Nursing*. I, II. 4 hr. PR: Nsg. 110 or consent. Dynamics of human behavior as related to psychopathology and nurse-patient relationship. Clinical experience includes participation in group process and interpersonal nurse-patient relationships.
160. *Community Nursing*. I, II. 3 hr. PR: Nsg. 110 or consent. Focuses on family health as it relates to systems theory, emphasizing physical, social, psychological dimensions. Explores community resources which enhance family health. Student renders comprehensive nursing care to selected families.
170. *Introduction to Research in Nursing*. I, II. 2 hr. PR: Junior standing or consent. Considers application of the research method of improving patient care and evaluation of current research. Elements of research design and problems of human research.

201. *Leadership in Nursing Practice*. I, II. (Yr. Course.) 3 hr. PR: Mgt. 216 or equiv., senior standing or consent. Examines relationship of leadership and management theory to nursing practice. Leadership styles, change, role transformation and decision making are explored. The focus is on application of leadership process in nursing practice.
211. *Principles of Community Health*. I, II. 2 hr. PR: Senior standing or consent. Concurrent with Nsg. 260. Methods of studying community health problems and ways of organizing community health services.
220. *Nursing of the Physically Ill Adult*. I, II. 4 hr. PR: Senior standing or consent. Nursing problems associated with degree, duration, and sequela of health change. Emphasizes developing nursing competencies with respect to nursing diagnosis, intervention, planning, managing, coordinating care of groups of patients. Clinical experiences with acutely ill and long-term patients.
230. *Nursing of Children Seminar*. I, II. 2 hr. PR: Senior standing or consent. Discussion and clinical experience concerned with continued nursing care required for the ill and handicapped child and supportive needs of the child's family. Emphasis on coordination of health care for children with major health problems.
240. *Maternity Nursing Seminar*. I, II. 2 hr. PR: Senior standing or consent. Broadening and deepening of concepts, principles, and practices of maternity nursing. Emphasis on special problems and on nursing appraisal of patients' needs. Clinical experience with groups of maternity patients.
250. *Special Problems in Psychiatric Nursing*. I, II. 2 hr. PR: Senior standing or consent. Theoretical and experimental approaches to the investigation of nursing roles and mental health problems in the community. Clinical experience in a community mental health center.
260. *Community Nursing*. I, II. 2 hr. PR: Senior standing or consent. Concurrent with Nsg. 211. PR: Senior standing or consent. In-depth experience in community involvement. Special reference to emerging patterns in health care; role of nurse in assisting communities to meet health care needs. Clinical experiences are arranged in various community settings.
271. *Nursing in the Social Order*. I, II. 3 hr. PR: Senior standing or consent. Issues and trends in health care with particular emphasis on the role and responsibility of the individual practitioner and the profession of nursing in the provision of services; examination of underlying ideas, attitudes, values and beliefs through faculty-student forums, seminars, and debates.
291. *Special Topics*. I, II. 1-6 hr. Directed or independent study of topics of current interest in nursing. Experiences derived from student defined goals.
300. *Primary Care Nursing*. I, II. 3 hr. Concepts from the behavioral, biological, and medical sciences are identified, analyzed, and synthesized for application appropriate to nursing intervention in complex health situations. Focus is primarily on health assessment of individual and family. (Taught conjointly with Nsg. 310.)
301. *Nursing Intervention: A Social Process*. II, S. 3 hr. PR: Nsg. 300 and 310. An in-depth exploration of concepts from behavioral sciences basic to an understanding of ways individuals and families cope with their specific health situation. Includes examination of nurse-client-health team interactions for development of helping relationships. (Taught conjointly with Nsg. 311.)
302. *Nursing and the Health Care System*. I, II. 3 hr. PR: Nsg. 301 and 311. Focus is on theory and techniques for change in health care delivery systems in today's society. Deficiencies in health care delivery services identified in nursing practice (Nsg. 310, 311) analyzed; alternatives for correcting these deficiencies are examined. Emphasis on relevance of change theory. (Taught conjointly with Nsg. 312.)



310. *Health Assessment in Primary Care Nursing*. I, II. 3 hr. PR: Physiology or consent. Practicum for the systematic application of primary care nursing concepts. Experiences provide for development of skills in assessing the health status of individuals and families in complex health situations. Development of skills in physical assessment is included. (Taught conjointly with Nsg. 300.)
311. *Primary Care Nursing Practice*. II, S. 3 hr. PR: Nsg. 300 and 310. Development of skills in assisting the infirm and ill during diagnostic and therapeutic programs; managing medical care regimens for acutely and chronically ill within established protocol; assessing community resources and facilitating families' efforts to utilize them. (Taught conjointly with Nsg. 301.)
312. *Nursing Role Reconsidered*. I, II. 3 hr. PR: Nsg. 301 and 311. Experiences in application of theories, examined in Nsg. 302, in selected practice settings. Emphasis on utilization of planned change directed toward correction of recognized deficiencies in existing services to meet health needs of people. (Taught conjointly with Nsg. 302.)
370. *Theories in Nursing*. I, II. 2 hr. Comparative analysis of emerging and evolving theories in nursing. Emphasis on the sources of nursing theory and the research suggested for testing current nursing theories.
373. *Nursing Research: Process and Methods*. I, II, S. 2 hr. An examination of the research process and methods as a basis of evaluating studies in nursing. Each student is expected to develop a research design for a topic the student has identified.
400. *Clinical Practicum*. II, S. 3 hr. PR: Nsg. 302, 312, and 373. Selected clinical experiences in which student has the opportunity to experience the role of a family nurse clinician in primary care nursing. (A master's paper is required if Nsg. 497 is not elected.)
489. *Administration Practicum*. II, S. 3 hr. PR: Nsg. 302, 312, and 373. Experiences in which the student functions in the role of administrator in a selected health care delivery system. A master's paper is required if Nsg. 497 is not elected. A supporting course with 3 credit hours is required. (*Course will not be offered in 1978-79.*)
490. *Teaching Practicum*. II, S. 3 hr. PR: Nsg. 302, 312, and 373. Selected teaching experiences in which student has the opportunity to function in the role of a teacher of primary care nursing. (A master's paper is required if Nsg. 497 is not elected.) A supporting course with 3 credit hours is required. (*Course will not be offered in 1978-79.*)
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Graduate standing, written consent. Selected topics from these areas: clinical nursing, nursing education, administration of health care delivery systems, and current issues in health care delivery services. (May be repeated for credit.)
497. *Research*. II, S. 1-15 hr. PR: Nsg. 302, 312, and 373, and Advanced Statistics (Inferential). Student completes a master's thesis from the problem identified and developed in Nsg. 373.

# School of Pharmacy

Pharmacy was first offered at WVU as a department in the School of Medicine, beginning in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program, including two years of pre-pharmacy.

The pharmacy curriculum consists of three years of professional study preceded by a minimum of two years of study in an accredited College of Arts and Sciences.

The objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy.

The curriculum is designed to provide the student with the scientific and technical knowledge and communication skills required to practice the profession and to inculcate in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions also are available in various government agencies, professional organizations, and industry. Pharmacists are eligible for commissions in the armed forces and the U.S. Public Health Service.

Graduates also may prepare for careers in teaching and research by entering graduate schools for specialization in pharmacy, pharmaceuticals, pharmacognosy, pharmaceutical chemistry, pharmacy administration, and pharmacology. The pharmaceutical industry provides opportunities in a variety of capacities in promotion, distribution, production, and research.

## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The Council is composed of members from American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy whose object is to promote the interests of pharmaceutical education. All institutional members must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for registration by the State Board of Pharmacy, the applicant must be a citizen, not less than 21 years of age, and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the Board of Pharmacy.

Interns must be registered with the State Board of Pharmacy and must be enrolled in or a graduate of a recognized school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Dean's Office.

Graduates of the School of Pharmacy are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia State Board of Pharmacy examination are privileged to reciprocate,

without further examination, with forty-seven other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.

Admission

All students planning to seek enrollment in the School of Pharmacy must comply with regulations appearing in this and the WVU Undergraduate Catalog.

Students preparing for the study of pharmacy may satisfy the requirements for entrance into the School of Pharmacy by majoring in any Arts and Sciences subject and including in their course selection the following or their equivalents:

English Composition . . . . .	6 hr.	Physics . . . . .	8 hr.
College Algebra . . . . .	3 hr.	Electives* . . . . .	18 hr.
Trigonometry . . . . .	3 hr.		
Principles of Economics . . . . .	6 hr.	TOTAL . . . . .	68 hr.
Biology, General . . . . .	8 hr.		
Chemistry, General . . . . .	8 hr.		
Chemistry, Organic . . . . .	8 hr.		

Electives must be designed to satisfy University Core Curriculum requirements.

\*Electives:

- Core Group A . . . . . 12 hr.
- Core Group B . . . . . 6 hr.

University Core Curriculum Group A includes: Art, English (exclusive of English 1 and 2), Humanities, Languages, Music, Philosophy, Religious Studies, Selected Multidisciplinary Studies, Speech Communication, and Theatre.

University Core Curriculum Group B includes: Forestry 140, Geography, History, Political Science, Psychology, Selected Multidisciplinary Studies, Social Science, Sociology and Anthropology, and Economics (for Pharmacy students, Group B Economics would include any Economics electives beyond the 6-hr. required courses).

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

Admissions are competitive and are based on cumulative academic average and science average achieved in all prior college courses, and a personal interview, and results of the Pharmacy College Admission Test (PCAT).

For admission to the School of Pharmacy, formal application should be made to the Committee on Admissions of the School of Pharmacy as early as possible after January 1, but before April 1, preceding the fall term (first semester) in which the student is seeking enrollment.

Applicants should write to the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, which will furnish official blanks on which formal application must be made.

A \$10.00 application fee is required and must accompany the application.

Each applicant is expected to deposit \$50.00 before the applicant's name is entered upon the official list of those accepted to the School of Pharmacy. If the applicant enrolls, this sum is applied to the first semester tuition. If the applicant fails to enroll, this deposit fee is forfeited.

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.



Complete information may be obtained from the Dean of the School of Pharmacy, or from the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

#### Pharmacy College Admission Test

Completion of the Pharmacy College Admission Test (PCAT) is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from your pre-pharmacy adviser, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 304 East 45th St., New York, NY 10017.

#### Personal Interview

A personal interview with the Committee on Admissions will be required. Interviews will be held at the WVU Medical Center and will be arranged as far as possible to suit the convenience of the applicant. They are scheduled during February, March, and April. Only applicants with a cumulative and science average above 2.5 will be called for an interview unless openings are available.

#### Admission to Advanced Standing

If space is available, students from other accredited schools of pharmacy may be admitted provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses will not be transferred.

### Student Status and Advancement

The determination of student status is in the hands of the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of the Dean. In the School of Pharmacy all grades, except W, WU, P, and X, are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average in professional subjects. An F grade or failure to attain a 2.0 average in any semester will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second year must petition the Committee on Academic Standards for advancement to the senior year.

Any first-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time

necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 14 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

#### Special Requirements

All students satisfactorily completing the first professional year must obtain professional liability insurance before being allowed to begin the second professional year. Professional liability insurance will be continuously maintained in effect through completion of the third professional year. Failure to have liability insurance will result in students not being enrolled in required clinical clerkships.

Students in the first professional year will be required to obtain an Intern Certificate from the West Virginia Board of Pharmacy, and to maintain it through completion of the third professional year.

During the second professional year, students will be informed of their assigned schedules for third professional year required clinical clerkships. Students also will be informed as to the West Virginia community or communities in which they will reside during these clerkships, the names of their preceptors, and the dates of attendance. The school will provide each student the opportunity to participate in choice of assignments, but it reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying clerkship requirements.

#### Requirements for Degree

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

#### Course Changes

A student who desires to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission of such change from the Dean.

#### Curriculum

Students enrolled in the School of Pharmacy after August, 1975, will complete the School of Pharmacy Curriculum Plan (or modifications of this plan) shown on page 106.

# SCHOOL OF PHARMACY CURRICULUM PLAN

## First Professional Year

<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Bioch. 139 – Gen. Biochem. . . . .	4	Phar. 240 – Phar. & Ther. I . . . . .	4
Anat. 101 – Hum. Anat. . . . .	3	Phar. 203 – Concepts. Phar. II . . . . .	4
Phar. 141 – Elem. Physiol. . . . .	4	Phar. 241 – Fund Pathophys. . . . .	3
Phar. 200 – Prep. Phar. Pract. . . . .	2	MBIO. 220 – Microbiology . . . . .	4
Phar. 201 – Concepts Phar. I . . . . .	4	Phar. 228 – Phar. Pract. Leg. Env. . . . .	4
Phar. 227 – Phar. Soc. Env. . . . .	2		
	19		19

## Second Professional Year

<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Phar. 204 – Concepts Phar. III . . . . .	4	Phar. 244 – Phar. & Ther. III . . . . .	3
Pcol. 242 – Phar. & Ther. II . . . . .	6	Phar. 205 – Phar. Pract. . . . .	4
Phar. 229 – Man. Asp. Phar. . . . .	3	Phar. 230 – Prof. Asp. Phar. . . . .	3
Phar. 243 – Chem. Immu. Agts. . . . .	3	Phar. 260 – Princ. Med. . . . .	2
Phar. 207 – Intro. to Drug Lit. . . . .	1	Electives . . . . .	2-4
Electives . . . . .	1-3		
	17-20		16-18

## Third Professional Year

<i>First Session (Summer)</i>	<i>Hr.</i>	<i>Second Session (First Sem.)</i>	<i>Hr.</i>
Phar. 250 – Amb. Care Clerk . . . . .	4	Phar. 250, 251, 252, and 253 (See <i>First Session</i> ) . . . . .	16
Phar. 251 – Med. Team Clerk . . . . .	4	or	
Phar. 252 – Inst. Care Clerk . . . . .	4	Electives . . . . .	16
Phar. 253 – Elect. Clerk . . . . .	4	or	
	16	Free Session	
or			
Free Session			
 <i>Third Session (Second Sem.)</i>	 <i>Hr.</i>		
Phar. 250, 251, 252, and 253 . . . . .	16		
or			
Electives . . . . .	16		
or			
Free Session			

## Graduate Study

### Pharmaceutical Sciences

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

#### Admission

Applicants for admission must satisfy the general requirements for admission to the WVU Graduate School. The applicant will possess a baccalaureate



degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences. In addition, graduate record examination scores in the verbal and quantitative portions of the examinations will be required from all students, and TOEFL, or similar scores, will be required of foreign students.

#### Academic Standards

No credits are acceptable toward a graduate degree with a grade lower than a C.

The graduate student must have a cumulative grade-point average of at least 3.0 in all graduate courses to qualify for the degrees.

#### Master of Science (M.S.)

The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology, pharmacognosy, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceutics, and pharmacokinetics.

#### Requirements for Master of Science Degree

Upon acceptance to the program, the student will select the student's major adviser who will also serve as chairman of the student's advisory committee and of the student's examination committee, and as thesis supervisor. The advisory committee will approve a plan of study and a research project for the thesis requirement.

To be eligible for the degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis.

Upon completion of the course work and research requirements, and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

#### Doctor of Philosophy (Ph.D.)

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry and pharmaceuticals/biopharmaceutics/pharmacokinetics.

#### Requirements for the Ph.D. Degree

The first year of study is usually occupied with course work with the guidance of an interim advisory committee. During this time each student will confer with appropriate faculty members concerning their research projects, and a major professor and research committee should be chosen by the end of one year. A formal plan of study and research plan will be submitted to the Graduate School by the student, the major adviser, and the research committee. The interest to pursue the M.S. or Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student with committee advice may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S. except for preparing and defending a thesis.

Progress will continue with guidance from the research committee and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted for candidacy for the Ph.D. degree the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D. the dissertation must be satisfactorily completed and defended at an oral examination.

## Courses of Instruction in Pharmacy

Professors Choulis, Lim, Luzzi, O'Connell, and Wojcik; Associate Professors Baldwin, Brister, Malanga, Martinelli, Mauger, and Stratford; Associate Professor (part-time) Daniels; Assistant Professors Deglin, Howard, Hoy, Jacknowitz, Ma, O'Donnell, Proveaux, Riley, Steiner, Tourville, and Weart; Assistant Professor (part-time) Bell; Instructors Anido, Gill, and Skarzenski; Lecturer Lively; Clinical Associate Professor Lowe; Adjunct Assistant Professor Harper; Clinical Instructors Anderson, Angotti, Bartsch, Bell, Bovenizer, Comm, Crawford, Criss, Edgell, Gastineau, Fruth, Gianettino, Goodykoontz, J. Griffith, W. Griffith, Hammond, Hickman, Holmes, Larson, Lindsay, Lusk, Malanga, Martin, Meredith, Midcap, Miller, Muha, Neurman, Pierce, Plummer, Prettyman, Scott, Shaw, Smith, Solomon Stanley, Swisher, Toompas, Tonkovich, Vladimery, Wallace, Winters, Van Meter, and Zicafoose.

### Pharmacy

#### Phar.

200. *Preparation for Pharmacy Practice. I.* 2 hr. PR: First-year pharmacy student or consent. A study of pharmaceutical calculations, pharmaceutical literature, and an overview of pharmacy practice.
201. *Concepts in Pharmaceutics I. I.* 4 hr. PR: First-year pharmacy student or consent. A discussion of introductory material in the practice of pharmacy and a discussion of the concepts underlying solution dosage forms.
203. *Concepts in Pharmaceutics II. II.* 4 hr. PR: Phar. 201. Basic principles of formulation, *in vitro* evaluation and bioavailability implications of pharmaceutical dosage forms represented by solids and polyphasic systems. Includes small and large scale processing of tablets, capsules, suspensions, emulsions and suppositories.
204. *Concepts in Pharmaceutics III. I.* 4 hr. PR: Second-year standing in Pharmacy or consent. Special dosage forms, quality control, and drug dosage regimens of pharmaceutical formulations and their conformity with F.D.A. regulations and good manufacturing practices.
205. *Pharmacy Practice. II.* 4 hr. PR: Second-year standing in Pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.
207. *Introduction to Drug Literature. I.* 1 hr. PR: Second-year pharmacy student or consent. To acquaint the pharmacy student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.
211. *Sterile Products. I, II.* 3 hr. PR: Third-year standing in Pharmacy. Board view of the technology involved in sterilization, and in the preparation and administration of sterile dosage forms. 2 hr. lec., 3 hr. lab.

212. *Non-Prescription Drugs*. I. 3 hr. PR: Phar. 205; third-year standing in Pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
- 213/300. *Industrial Pharmacy*. I. 4 hr. PR: Phar. 204 or graduate standing. Introduction of the manufacture of dosage forms of their quality control. Structure of the industry and governmental influences. Special attention to new drug evaluation with regard to safety and efficacy.
- 214/314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
- 215/315. *Physical Pharmacy*. II. 3 hr. PR: First-year standing in Pharmacy. Designed to illustrate the special application of physiochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. II. 3 hr. PR: Enrollment in School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.
227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.
229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I. 3 hr. PR: Senior standing in Pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
240. *Pharmacodynamics and Therapeutics I*. II. 4 hr. PR: First-year standing in Pharmacy or consent. Consolidation of pharmacologic and medicinal chemical principles underlying mechanisms of drug action and the therapeutic applications of these pharmacodynamic principles in the management of disease states.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: Anatomy and physiology or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
242. *Pharmacodynamics and Therapeutics II*. I. 6 hr. PR: Phar. 240 or consent. Continuation of Phar. 240.
243. *Chemotherapeutic and Immunobiologic Agents*. I. 3 hr. PR: Consent or second-year standing in Pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.
244. *Pharmacodynamics and Therapeutics III*. II. 5 hr. PR: Pcol. 242 or consent. Continuation of Pcol. 242.



250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. Students will participate on a health care team in an in-patient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. Extensive experience will be gained in the practice of pharmacy in institutional centers with emphasis on the pharmacist's relationship with institutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Therapeutics*. I. 3 hr. Clinical pharmacological approach to the study of currently used drugs in the proper management of diseases.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.
272. *Medicinal Chemistry*. II. 3 hr. PR: Consent.
276. *Pharmaceutical Quality Control*. I. 3 hr. PR: Second-year standing in Pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present. (*Not offered in 1978-79.*)
284. *Public Health* I or II. 2 hr. Measures required for the application of the pharmacists' knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies. (*Not offered in 1978-79.*)
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S. 1-3 hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacognosy, or pharmacy.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
302. *Advanced Pharmaceutics*. I or II. 3 hr. Physiochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.
320. *Drug Regulation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.
321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.
323. *Economics of the Pharmaceutical Industry*. I or II. 3 hr. History, background, and formation of major drug industries, oligopolistic practices, mergers, combines, costs of research, and production.

340. *Organic Plant Constituents*. I or II. 3 hr. Occurrence, properties, biogenesis, etc. of a number of classes of organic compounds derived from plants. Emphasis on secondary metabolites which contain products of pharmaceutical or medicinal interest. (*Not offered in 1978-79.*)
341. *Isolation of Plant Constituents*. I or II. 3-5 hr. Acquaints the student with techniques used in extraction, separation, and isolation of plant constituents. (*Not offered in 1978-79.*)
370. *The Synthesis of Drugs*. I or II. 4-5 hr. Design of drug molecules on the basis of structure-activity relationships and approaches to synthesis of such compounds. Laboratory to accompany in which representative types of biologically active compounds are prepared. (*Not offered in 1978-79.*)
375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of Phar. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.
377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course (*Not offered in 1978-79.*)
390. *Special Topics*. I, II. 1-4 hr.
391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. Presentation and discussion of special topics and research in the pharmaceutical sciences.
396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
491. *Advanced Study*. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures. (*Not offered in 1978-79.*)
496. *Graduate Seminar*. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of the student's program. (*Not offered in 1978-79.*)
497. *Research*. 1-15 hr.
498. *Thesis*. 2-4 hr. PR: Consent.

# Faculty and Staff

Gene A. Budig, *President*

Charles E. Andrews, *Vice President for Health Sciences*

Jay Barton, II, *Vice President and Provost for Academic Affairs*

Ralph E. Nelson, *Vice Provost for Academic Affairs*

Raymond M. Haas, *Vice President for Administration*

Ray Koppelman, *Vice President for Energy Studies, Graduate Programs, and Research*

Harold J. Shamberger, *Executive Officer*

Harry W. Ernst, *Assistant to the President for Communications*

Henry D. Collins, *Assistant to the President*

Edith I. Kelley, *Executive Secretary to the President*

## Medical Center

*Charleston Division*, Thomas W. Mou, M.D., *Dean*

*Dentistry*, W. Robert Biddington, D.D.S., *Dean*

*Medicine*, John E. Jones, M.D., *Dean*

*Nursing*, Lorita D. Jenab, Ed.D., *Dean*

*Pharmacy*, Louis A. Luzzi, Ph.D., *Dean*

*University Hospital*, Eugene L. Staples, M.H.A., *Director*

## School of Dentistry

John D. Adams, D.D.S. (U. Pitt.), *Professor Emeritus of Fixed Prosthodontics*.

Camillo A. Alberico, D.D.S. (Marquette U.), *Assistant Dean; Professor and Chairman of Endodontics*.

Frank S. Balaban, D.D.S. (WVU), *Assistant Professor of Endodontics*.

Aviva Barber, M.S. (Boston U.), *Assistant Professor of Dental Hygiene*.

Jack H. Baur, Jr., D.D.S. (WVU), *Instructor (part-time) in Endodontics*.

Henry J. Bianco, Jr., D.D.S. (U. Md.), *Professor and Chairman of Prosthodontics*.

W. Robert Biddington, D.D.S. (U. Md.), *Dean; Professor of Endodontics*.

Joseph J. Bonello, D.D.S. (U. Pitt.), *Clinical Associate Professor (part-time) of Orthodontics*.

Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor and Chairman of Oral Pathology*.

Dale C. Bowers, D.D.S. (Ohio St. U.), *Assistant Professor of Oral Diagnosis and Radiology*.

John L. Campbell, D.D.S. (Ind. U.), *Professor and Chairman of Oral Surgery*.

Minter L. Chapman, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry*.

Myles I. Cogan, D.D.S. (U. Tex.), *Clinical Instructor in Oral Surgery*.

Rose-Marie Crystal, M.S. (Columbia U.), *Assistant Professor of Dental Hygiene*.

Donald Davidson, D.D.S. (U. Buffalo), *Special Lecturer in Oral Surgery*.

Leo DeCounter, D.D.S. (U. Iowa), *Associate Professor of Removable Prosthodontics*.

John Dempsey, D.D.S. (U. Md.), *Assistant Professor (part-time) of Orthodontics*.

Bruce C. Dietterick, D.D.S. (WVU), *Instructor (part-time) in Operative Dentistry*.

Peter H. Fagan, D.D.S. (Loyola U., Chicago), *Clinical Instructor in Community Dentistry*.

Sanford J. Fenton, D.D.S. (NY C. Dent.), *Assistant Professor of Pediatric Dentistry*.

James R. Foor, D.D.S., (WVU), *Assistant Professor of Operative Dentistry*.

Cathryn Frere, M.S. (U. So. Calif.), *Assistant Professor of Dental Hygiene*.

John W. Frye, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry*.

David G. Funderburk, D.D.S. (WVU), *Instructor (part-time) in Endodontics*.

Lawrence Gaston, D.D.S. (WVU), *Associate Professor of Orthodontics*.

Calvin Gaver, D.D.S. (U. Md.), *Associate Professor of Operative Dentistry*.

Stephen C. Gladwin III, D.D.S. (WVU), *Instructor in Operative Dentistry*.

William L. Graham, D.D.S. (U. Md.), *Assistant Dean; Professor and Chairman of Oral Diagnosis and Radiology*.

Catherine Graves, B.S. (U. Buffalo), *Instructor in Dental Hygiene*.

Robert W. Graves, D.D.S. (WVU), *Associate Professor of Oral Surgery*.



James A. Griffin, D.D.S. (Baylor U.), *Professor of Endodontics.*  
 Geoffrey Gwynn, D.D.S. (WVU), *Assistant Professor (part-time) of Pediatric Dentistry.*  
 Joseph D. Hancock, D.D.S. (WVU), *Clinical Instructor in Administration.*  
 George Harper, D.D.S. (WVU), *Instructor in Removable Prosthodontics.*  
 David M. Hickman, D.D.S. (WVU), *Instructor in Dental Practice Management.*  
 Howard Hoffman, D.D.S. (Howard U.), *Clinical Instructor in Community Dentistry.*  
 Robert H. Hornbrook, D.D.S. (WVU), *Assistant Professor (part-time) of Periodontics.*  
 Janice Huetter, D.D.S. (U. Detroit), *Instructor in Periodontics.*  
 Jack G. Hutton, Jr., Ph.D. (U. Conn.), *Visiting Educational Specialist.*  
 Barbara Ingersoll, Ph.D. (Penn. St. U.), *Assistant Professor of Community Dentistry.*  
 Charles R. Jackson, D.D.S. (WVU), *Instructor in Operative Dentistry.*  
 David C. Johnsen, D.D.S. (U. Mich.), *Associate Professor of Pediatric Dentistry.*  
 Richard Kelly, D.D.S. (WVU), *Instructor (part-time) in Operative Dentistry.*  
 Gordon G. Keyes, D.D.S. (U. Md.), *Assistant Professor of Oral Pathology.*  
 Darryl R. King, D.D.S. (WVU), *Assistant Professor (part-time) of Oral Surgery.*  
 Edwin Kluth, D.D.S. (Case West. Res. U.), *Assistant Professor of Prosthodontics.*  
 Stephen Kwiatkowski, D.D.S. (WVU), *Assistant Professor of Fixed Prosthodontics.*  
 Greg Lacy, D.D.S. (WVU), *Instructor in Removable Prosthodontics.*  
 Raymond M. Ladwig, D.D.S. (WVU), *Assistant Professor of Fixed Prosthodontics.*  
 Robert J. Layman, D.D.S. (WVU), *Assistant Professor of Operative Dentistry.*  
 William R. McCutcheon, D.D.S. (WVU), *Associate Professor and Chairman of Community Dentistry.*  
 Hubert E. Martin, D.D.S. (U. Pitt.), *Assistant Professor (part-time) of Orthodontics.*  
 Michael D. Mason, D.D.S. (WVU), *Instructor (part-time) in Operative Dentistry.*  
 Richard L. Meckstroth, D.D.S. (Loma Linda U., Cal.), *Instructor in Community Dentistry.*  
 William W. Merow, D.D.S. (U. Md.), *Professor and Chairman of Orthodontics.*  
 J. M. Metheny, D.D.S. (WVU), *Instructor (part-time) in Fixed Prosthodontics.*  
 Donald Morrison, D.D.S. (U. Iowa), *Associate Professor and Chairman of Periodontics.*  
 Robert L. Murphy, M.S. (Cath. U. Am.), *Adjunct Associate Professor of Community Dentistry.*  
 David Nash, D.M.D. (U. Ky.), *Associate Professor and Chairman of Pediatric Dentistry.*  
 Gary Naylor, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry.*  
 Franklin Oliverio, D.D.S. (U. Md.), *Assistant Professor (part-time) of Oral Surgery.*  
 James E. Overberger, D.D.S. (U. Pitt.), *Associate Dean; Professor of Dental Materials.*  
 Donald E. Patthoff, D.D.S. (U. Detroit), *Clinical Instructor in Community Dentistry.*  
 Daniel E. Pickle, D.D.S. (U. Ill.), *Assistant Professor of Periodontics.*  
 Robert G. Pifer, D.D.S. (WVU), *Assistant Professor of Oral Diagnosis and Radiology.*  
 Daniel L. Pinson, D.D.S. (WVU), *Clinical Instructor (part-time) in Endodontics.*  
 David T. Puderbaugh, D.D.S. (WVU), *Associate Professor and Chairman of Dental Practice Management.*  
 William Queen, D.D.S., (WVU), *Instructor in Removable Prosthodontics.*  
 Nancy V. Ramsey, M.S. (U. Mich.), *Associate Professor and Chairwoman of Dental Hygiene.*  
 Vernon Rodeffer, D.D.S. (U. Md.), *Assistant Professor of Operative Dentistry.*  
 Jack A. Roth, D.D.S. (U. Md.), *Instructor in Removable Prosthodontics.*  
 John Ruby, D.D.S. (U. Penn.), *Assistant Professor (part-time) of Pediatric Dentistry.*  
 Robert E. Sausen, D.D.S. (U. Minn.), *Professor and Chairman of Operative Dentistry.*  
 Richard Seime, Ph.D. (U. Minn.), *Assistant Professor of Community Dentistry.*  
 Anne W. Shoaf, B.S. (WVU), *Assistant Professor of Dental Hygiene.*  
 A. Eddy Skidmore, D.D.S. (WVU), *Associate Professor of Endodontics.*  
 Homer Smith, D.D.S. (WVU), *Assistant Professor of Oral Diagnosis.*  
 Keith S. Smith, II, D.D.S. (WVU), *Assistant Professor of Fixed Prosthodontics.*  
 Norton P. Smith II, D.D.S. (WVU), *Instructor (part-time) in Fixed Prosthodontics.*  
 Charles Somers, D.D.S. (Loyola U.), *Professor of Removable Prosthodontics.*  
 Elizabeth Taylor, B.S. (WVU), *Instructor (part-time) in Dental Hygiene.*  
 Andrew J. Tatch, D.D.S. (WVU), *Assistant Professor (part-time) of Orthodontics.*  
 James G. Thomas, D.D.S. (Temple U.), *Professor of Oral Diagnosis and Radiology.*  
 Pamela J. Tsklenis, M.S. (Boston U.), *Assistant Professor of Dental Hygiene.*  
 Harold E. Tucker, D.D.S. (Va. Commwlth. U.), *Professor of Fixed Prosthodontics.*

Edmond G. VandenBosche, D.D.S. (U. Md.), *Associate Professor of Operative Dentistry.*  
 Alfred VanRiper, D.D.S. (WVU), *Assistant Professor (part-time) of Removable Prosthodontics.*  
 David H. Walker, D.D.S. (WVU), *Assistant Professor of Dental Practice Management, Charleston Division.*  
 Robert Wanker, D.D.S. (WVU), *Assistant Professor (part-time) of Periodontics.*  
 Bill W. Weaver, D.D.S. (Ohio St. U.), *Assistant Professor of Operative Dentistry.*  
 John T. Welch, D.D.S. (U. Md.), *Professor and Chairman of Hospital Dentistry.*  
 John Westfall, D.D.S. (WVU), *Instructor (part-time) in Periodontics.*  
 Thomas Witzemberger, D.D.S. (WVU), *Assistant Professor of Dental Hygiene.*  
 John B. Wilfong, D.D.S. (WVU), *Assistant Professor (part-time) of Orthodontics.*

## School of Medicine

Ernest L. Abernathy, M.D. (Emory U.), *Clinical Professor of Pathology.*  
 Joseph N. Aceto, M.D. (Jeff. Med. C.), *Clinical Professor of Radiology.*  
 Francis H. Adams, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Margaret J. Albrink, M.D. (Yale U.), *Professor of Medicine (Metabolism-Endocrinology).*  
 Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), *Professor of Pathology.*  
 Martin D. Allan, M.S. (WVU), *Adjunct Instructor in Radiology (Radiation Safety).*  
 Joel Allen, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Ralph S. Amato, M.D. (U. Nebr.), *Associate Professor of Pediatrics.*  
 Federico L. Ampil, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Sharad Amtey, Ph.D. (Vanderbilt U.), *Associate Professor of Radiology (Radiation Safety).*  
 Linda Anderson, B.S. (WVU), *Instructor (part-time) in Medical Technology.*  
 Warren Anderson, M.D. (Temple U.), *Clinical Associate Professor of Medicine (Cardiology).*  
 William E. Anderson, M.D. (U. Minn.), *Professor of Medicine; Chairman, Division of Gastroenterology.*  
 Charles E. Andrews, M.D. (Boston U.), *Professor of Medicine; Vice President—Health Sciences.*  
 Vicente Anido, M.D. (Havana U.), *Professor Emeritus of Pathology.*  
 Dominic A. Antico, M.D. (U. Chicago), *Associate Professor of Radiology; Chairman of Division of Diagnostic Radiology.*  
 Peter N. Arkis, M.A. (Kent St. U.), *Instructor in Surgery (Otolaryngology).*  
 Jerome Arnett, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
 Steven A. Artz, M.D. (Syracuse U.), *Clinical Associate Professor of Medicine.*  
 Hiroaki Asato, M.D. (Kumamoto U.), *Assistant Professor of Medicine (Cardiology).*  
 Marshall W. Ashby, M.D. (Howard Med. C.), *Assistant Professor of Surgery.*  
 Bipinchandra Avashia, M.B.B.S. (Med. C., Baroda), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
 Michael D. Avington, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology).*  
 Frank J. Ayd, M.D. (U. Md.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
 Moutassem Ayoubi, M.D. (Damascus U.), *Clinical Assistant Professor of Pediatrics.*  
 Albert J. Azzaro, Ph.D. (WVU), *Associate Professor of Neurology and Pharmacology.*  
 Lyle E. Baade, Ph.D. (Fla. St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Prakash C. Bangani, M.B.B.S. (Med. C. Indore), *Clinical Assistant Professor of Surgery (Orthopedics).*  
 Thomas A. J. Baranowski, Ph.D. (U. Kans.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Carl Barger, M.D. (Med. C. Va.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Carolyn E. Barnes, Ph.D. (U. Pitt.), *Assistant Professor of Physical Therapy.*  
 Marylou R. Barnes, Ed.D. (WVU), *Professor and Director of Physical Therapy.*  
 Dilip K. Basu, M.B.B.S. (U. Calcutta), *Clinical Assistant Professor of Medicine (General Internal).*  
 Mildred Bateman, M.D. (Wom. Med. C. Pa.), *Clinical Professor of Behavioral Medicine and Psychiatry.*

John J. Battagline, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Charles L. Beall, M.D. (WVU), *Assistant Professor (part-time) of Medicine (Hematology), Wheeling Division.*

Kamal M. Behnam, M.D. (U. Cairo), *Clinical Associate Professor of Obstetrics and Gynecology.*

John U. Bell, Ph.D. (Dalhousie U., Halifax, N.S.), *Assistant Professor of Pharmacology.*

Ross O. Bell, M.D. (U. Penn.), *Clinical Associate Professor of Pathology.*

John Bellotte, M.D. (WVU), *Assistant Professor of Anesthesiology and Medicine.*

William A. Beresford, Ph.D. (Oxford U.), *Professor of Anatomy.*

Patricia Berger, MT(ASCP) (Salem C.), *Adjunct Instructor in Medical Technology.*

Bruce L. Berry, M.D. (WVU), *Clinical Instructor in Obstetrics and Gynecology.*

James B. Blair, Ph.D. (U. Va.), *Associate Professor of Biochemistry.*

Donald M. Blatchley, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Medicine (Dermatology).*

Nancie Blehschmidt, B.S. (WVU), *Instructor in Medical Technology.*

Wayne G. Bodenheimer, Ph.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Brian Boehlecke, M.D. (SUNY-Buffalo), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine).*

James P. Boland, M.D. (Jeff. Med. C.), *Professor of Surgery, and Chief of Surgery, Charleston Division.*

Walter A. Bonney, Jr., M.D. (Columbia U.), *Clinical Professor of Obstetrics and Gynecology.*

Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor of Pathology.*

Mohammed M. Boustany, M.D. (Damascus U.), *Assistant Professor of Surgery, Charleston Division.*

K. Douglas Bowers, Jr., M.D. (Jeff. Med. C.), *Clinical Associate Professor of Surgery (Orthopedics).*

John D. Bowles, Cert. PT (D. T. Watson Sch.), *Clinical Instructor in Physical Therapy.*

Allen F. Bowyer, M.D. (Loma Linda U.), *Professor of Medicine (Cardiology).*

Carole Brooks Boyde, M.D. (Wayne St. U.), *Associate Professor of Pathology.*

Bert E. Bradford, M.D. (Wash. U.), *Clinical Professor Emeritus of Surgery.*

Joseph E. Bradley, B.S. (WVU), *Clinical Instructor in Physical Therapy.*

Bernard Brady, M.D. (Nat. U. Ireland), *Assistant Professor of Anesthesiology.*

Nancy K. Brallier, M.S.W. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Paul Brown, Ph.D. (U. Chicago), *Associate Professor of Physiology and Biophysics.*

James Bryant, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Dennis Burech, M.D. (Ohio St. U.), *Clinical Assistant Professor of Pediatrics.*

Sandy L. Burkart, Ph.D. (WVU), *Associate Professor of Physical Therapy.*

Arnold C. Burke, M.D. (U. Ala.), *Clinical Assistant Professor of Family Practice.*

Simpson S. Burke, M.D. (Harvard U.), *Professor of Anesthesiology.*

Robert G. Burrell, Ph.D. (Ohio St. U.), *Professor of Microbiology.*

Roy L. Butcher, Ph.D. (Iowa St. U.), *Associate Professor of Obstetrics and Gynecology.*

Andrew K. Butler, M.D. (Rush Med. C.), *Clinical Professor of Radiology.*

Bobby Lee Caldwell, M.D. (Bowman Gray Sch. Med.), *Clinical Associate Professor of Pathology.*

William M. Caldwell, Jr., B.S.E.E. (U. Ky.), *Lecturer in Physiology and Biophysics.*

George R. Callender, M.D. (U. Md.), *Clinical Assistant Professor of Surgery (Orthopedics).*

William J. Canady, Ph.D. (G. Wash. U.), *Professor of Biochemistry.*

James Capage, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Stephen W. Carmichael, Ph.D. (Tulane U.), *Associate Professor of Anatomy.*

Marshall J. Carper, M.D. (Med. C. Va.), *Associate Professor of Family Practice, Charleston Division.*

James F. Carruth, Ph.D. (U. Ill.), *Clinical Professor of Behavioral Medicine and Psychiatry and Psychology.*

Donald C. Carter, M.D. (U. Nebr.), *Professor of Behavioral Medicine and Psychiatry.*



William H. Carter, M.D. (U. Va.), *Clinical Associate Professor of Medicine.*

Walter A. Case, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

Leonidas Castro, M.D. (Nat. U. Colombia), *Clinical Professor of Radiology (Radiation Therapy).*

Andrew J. Catanzaro, M.D. (Ohio St. U.), *Clinical Assistant Professor of Medicine, (General Internal).*

Carl H. Cather, Jr., M.D. (Harvard U.), *Clinical Associate Professor of Surgery (Otolaryngology).*

Carrell Caudill, M.D. (Duke U.), *Clinical Professor of Surgery (Neurological).*

Graciano Eusebio Cendana, M.D. (U. Santo Tomas), *Clinical Associate Professor of Pathology.*

John T. Chambers, M.D. (West. Res. U.), *Clinical Associate Professor of Obstetrics and Gynecology.*

Nyles Charon, Ph.D., (U. Minn.), *Assistant Professor of Microbiology.*

James M. Chicklo, M.D. (U. Va.), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Shawn Chillag, M.D. (WVU), *Assistant Professor of Medicine (Behavioral and Ambulatory); Physician, Health Service.*

Shi-Ming (Samuel) Chou, M.D. (Nat. Taiwan U.), Ph.D. (U. Wisc.), *Professor of Pathology, Neurology, and Surgery (Neurological).*

Thomas E. Chvasta, M.D. (U. Pitt.), *Clinical Associate Professor of Medicine (Gastroenterology).*

Joseph A. Cipic, M.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Robert N. Clark, M.D. (U. Penn.), *Professor of Surgery and Chairman of Orthopedics.*

John P. Claude, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

David Clayman, Ph.D. (U. Vt.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Robert C. Cody, M.A. (U. Iowa), *Associate Professor of Surgery (Otolaryngology).*

Brenda K. Colasanti, Ph.D. (WVU), *Associate Professor of Surgery (Ophthalmology), and Pharmacology.*

Howard D. Colby, Ph.D. (SUNY), *Associate Professor of Physiology and Biophysics.*

David F. Colvin, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry and Medicine.*

Philip E. Comer, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry and Psychology.*

Patrick J. Condry, M.D. (WVU), *Assistant Professor of Medicine (Behavioral and Ambulatory), and Physician in Health Service.*

Janice W. Cone, M.S. (U. Denver), *Assistant Professor of Behavioral Medicine and Psychiatry.*

Francis W. Conley, M.D. (U. Iowa), *Clinical Associate Professor of Medicine.*

Cynthia F. Conner, B.S. (WVU), *Clinical Instructor in Physical Therapy.*

Barbara Ann Conway, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*

Alice C. Correll, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*

Brian Cosmann, M.D. (Queen's U., Belfast), *Assistant Professor of Radiology (Diagnostic).*

Charles R. Craig, Ph.D. (U. Wisc.), *Professor of Pharmacology.*

Paul L. Crawford, Ph.D. (Ohio U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*

William D. Crigger, M.D. (Temple U.), *Clinical Assistant Professor of Family Practice.*

William C. Crittenden, M.D. (Vanderbilt U.), *Clinical Assistant Professor of Pediatrics.*

Thomas W. Crosby, M.D. (WVU), *Assistant Professor of Neurology and Pathology.*

Mike Crouch, M.D. (U. Ark.), *Assistant Professor of Medicine (Rheumatology).*

Carolyn A. Crutchfield, Ed.D. (WVU), *Assistant Director; Associate Professor of Physical Therapy.*

James L. Culberson, Ph.D. (Tulane U.), *Associate Professor of Anatomy.*

Larry Curnutte, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*

John C. Cwik, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Anesthesiology.*

Kjell Dahlen, M.D. (Roy. C. Surg. & Phyn., Ireland), *Assistant Professor of Surgery (Ophthalmology).*

Robert D'Alessandri, M.D. (NY Med. C.), *Instructor in Medicine (General Internal); Physician, Health Service.*

Paul Davidson, M.D. (U. Minn.), *Clinical Associate Professor of Medicine (Metabolism-Endocrinology).*

Charles M. Davis, Jr., M.D. (U. Penn.), *Associate Professor of Surgery (Orthopedics).*

DelRoy R. Davis, M.D. (U. Wash.), *Clinical Professor of Family Practice.*

Wirt Lee Davis, M.D. (Med. C. Va.), *Clinical Assistant Professor of Surgery (Orthopedics).*

Samuel J. Deal, Ph.D. (U. Minn.), *Professor of Microbiology.*

Stuart M. Deglin, M.D. (Jeff. Med. C.), *Assistant Professor of Medicine (Cardiology).*

Phillip B. DeNee, Ph.D. (Lehigh U.), *Assistant Professor (part-time) of Anatomy.*

Anthony DiBartolomeo, M.D. (WVU), *Assistant Professor of Medicine; Chairman, Divisions of Rheumatology and General Internal Medicine.*

Thomas O. Dickey, M.D. (Ohio St. U.), *Clinical Assistant Professor of Family Practice.*

Herbert G. Dickie, Jr., M.D. (U. Va.), *Clinical Assistant Professor of Surgery (General).*

Daniel Dickinson, M.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (General).*

John T. Dickinson, M.D. (U. Pitt.), *Clinical Professor of Surgery (Otolaryngology).*

Beverly Diurba, B.S. (U. Pitt.), *Clinical Instructor in Physical Therapy.*

Larry A. Dodd, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Donald Doll, M.D. (WVU), *Adjunct Instructor in Medicine (Hematology/Oncology).*

Eugene Dorsey, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Steven Dreyer, Ph.D. (U. N.D.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

John J. Duda, Ph.D. (WVU), *Adjunct Assistant Professor of Microbiology.*

Ralph O. Dunker, Jr., M.D. (Ohio St. U.), *Assistant Professor of Surgery (Neurological).*

Dorothy C. Dunning, Ph.D. (Tufts U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

James Durig, M.D. (WVU), *Clinical Assistant Professor of Surgery (Urology).*

John W. Durkin, Jr., M.D. (U. Vt.), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics and Gynecology, Wheeling Division.*

George W. Easley, M.D. (Med. C. Va.), *Clinical Associate Professor Emeritus of Surgery.*

Herbert L. Eckert, M.D. (U. Md.), *Associate Professor (part-time) of Community Medicine and Pediatrics.*

Leonard M. Eckmann, M.D. (NYU), *Clinical Assistant Professor of Family Practice.*

Barry A. Edelstein, Ph.D. (Memphis St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Roy A. Edwards, Jr., M.D. (Med. C. Va.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

John S. Ellingson, Ph.D. (U. Mich.), *Associate Professor of Biochemistry.*

William Ellswood, M.D. (Tufts U.), *Clinical Professor of Radiology (Diagnostic).*

John H. Ellyson, M.D. (WVU), *Instructor in Surgery (General).*

M. K. Elyaderani, M.D. (Tehran U.), *Assistant Professor of Radiology (Diagnostic).*

Robert S. English, M.D. (Hahnemann Med. C.), *Clinical Assistant Professor of Medicine (Dermatology).*

Anthony Entress, M.D. (Westminister Hosp.), *Assistant Professor of Anesthesiology.*

Alexander V. Fakadej, M.D. (U. Va.), *Associate Professor of Neurology and Pediatrics.*

Okey B. Fawley, M.S.W. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry (Social Work).*

Jeffrey Fedan, Ph.D. (U. Ala.), *Assistant Professor (part-time) of Pharmacology.*

Charles W. Fedde, M.D. (U. Colo.), *Assistant Professor of Surgery (General).*

Roger G. Finch, M.B. Ch.B. (U. Birmingham, Eng.), *Assistant Professor of Medicine (Infectious Diseases).*

Kenneth M. Fink, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Janice M. Flaherty, M.D. (Colo. St. U.), *Assistant Professor of Family Practice.*

William W. Fleming, Ph.D. (Princeton U.), *Professor and Chairman of Pharmacology.*

Edmund B. Flink, M.D., Ph.D. (U. Minn.), *Claude Worthington Benedum Professor of Medicine (Metabolism-Endocrinology) and Behavioral Medicine and Psychiatry.*

Richard E. Flood, M.D. (Jeff. Med. C.), *Clinical Professor of Family Practice.*  
 Phyllis Flowers, Ph.D. (U. Mich.), *Assistant Professor of Surgery (Otolaryngology).*  
 John F. Foss, M.D. (U. Iowa), *Assistant Professor of Obstetrics and Gynecology; Physician, Health Service.*  
 John L. Fox, M.D. (Geo. Wash. U.), *Professor of Surgery (Neurological).*  
 Jimmie L. Frampton, M.S.W. (Fla. St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Gunter N. Franz, Ph.D. (U. Wash.), *Associate Professor of Physiology and Biophysics.*  
 David G. Frazer, Ph.D. (WVU), *Assistant Professor (part-time) of Physiology and Biophysics.*  
 Richard G. Frederickson, Ph.D. (U. N.D.), *Associate Professor of Anatomy.*  
 John C. Frich, Jr., M.D. (Geo. Wash. U.), *Professor of Radiology; Chairman, Division of Radiation Therapy.*  
 Morton H. Friedman, Ph.D. (U. Tenn.), *Associate Professor of Anatomy.*  
 Roger L. Frome, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 James L. Frost, M.D. (J. Hopkins Sch. of Med.), *Professor of Pathology.*  
 Nicholas W. Fugo, M.D. (U. Chicago), Ph.D. (St. U. Iowa), *Professor of Obstetrics and Gynecology; Physician, Health Service.*  
 John L. Fullmer, M.D. (WVU), *Clinical Associate Professor of Family Practice.*  
 Orlando Gabriele, M.D. (Yale U.), *Professor and Chairman of Radiology.*  
 R. Brooks Gainer, M.D. (WVU), *Clinical Assistant Professor of Medicine.*  
 Hubert R. Galford, B.S. (U. Pitt.), *Clinical Instructor in Physical Therapy.*  
 Rama Ganguly, Ph.D. (U. Calcutta), *Assistant Professor of Medicine (Infectious Diseases).*  
 Robert J. Gardner, M.D. (Northwestern U.), *Professor of Surgery (General).*  
 Dominic J. Gaziano, M.D. (Med. C. Va.), *Clinical Associate Professor of Medicine.*  
 Dimitar Georgiev, M.D. (U. St. Klement), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Maria Georgiev, M.D. (Med. Sch. Charles U.), *Assistant Professor of Medicine, Charleston Division.*  
 Vincent F. Gerencser, Ph.D. (U. Ky.), *Associate Professor of Microbiology.*  
 Alfred D. Ghaphery, M.D. (U. Pitt.), *Clinical Associate Professor of Surgery (General).*  
 Robert LeRoy Ghiz, M.D. (Northwestern U.), *Clinical Assistant Professor of Surgery (Orthopedics).*  
 Nicholas Giarritta, M.D. (U. Zurich), *Clinical Assistant Professor of Pathology.*  
 William E. Gilmore, M.D. (U. Wisc.), *Clinical Professor of Surgery (General).*  
 Fernando G. Giustini, M.D. (U. Rome), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Wilbert E. Gladfelter, Ph.D. (U. Penn.), *Associate Professor of Physiology and Biophysics.*  
 Louis M. Glick, M.D. (U. Md.), *Clinical Assistant Professor of Medicine (Gastroenterology).*  
 Douglas Gnepp, M.D. (Duke U.), *Instructor in Pathology.*  
 Lewis Goldberg, Ph.D. (Am. U.), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
 Rafael A. Gomez, M.D. (Bowman Gray Sch. Med.), *Clinical Instructor in Medicine.*  
 Irving J. Goodman, Ph.D. (U. Rochester), *Clinical Associate Professor of Behavioral Medicine and Psychiatry and Psychology.*  
 Andrew Goodwin, M.D. (U. Mich.), *Clinical Professor of Radiology (Diagnostic).*  
 Thomas D. Graff, M.D. (Temple U.), *Clinical Associate Professor of Anesthesiology.*  
 Nancie Ann Graham, B.S. (WVU), *Instructor in Medicine (Metabolism-Endocrinology) and Medical Technology.*  
 Robert W. Graves, D.D.S. (WVU), *Associate Professor of Dentistry and Pharmacology.*  
 Carlos F. Gray, M.D. (U. San Maros), *Adjunct Instructor in Medicine; Physician, Health Service.*  
 Robert Greco, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Francis H. Green, M.D. (Manchester U.), *Assistant Professor (part-time) of Pathology.*  
 Frances R. Gregory, B.S. (Kans. St. U.), *Clinical Instructor in Physical Therapy.*  
 Frank C. Griswold, M.D. (WVU), *Clinical Assistant Professor of Surgery (General).*  
 George Grubb, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*



Stephen Grubb, M.D. (Med. C. Va.), *Assistant Professor of Medicine—Charleston Division.*

Beverly Ann Gryth, B.A. (Augsburg C.), *Clinical Instructor in Physical Therapy.*

Robert F. Gustke, M.D. (WVU), *Clinical Assistant Professor in Medicine (Gastroenterology).*

Juan F. Gutierrez, M.D. (WVU), *Associate Professor of Anesthesiology.*

Ludwig Gutmann, M.D. (Columbia U.), *Professor and Chairman of Neurology; Professor of Physiology and Biophysics.*

Jose A. Gutrecht, M.D. (U. B. Aires), *Professor of Neurology.*

Nicholas Hahon, B.S. (D & E C.), *Assistant Professor (part-time) of Pediatrics.*

Duane E. Haines, Ph.D. (Mich. St. U.), *Associate Professor of Anatomy.*

Charles E. Haislip, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Milton R. Hales, M.D. (U. S. Cal.), *Professor of Pathology.*

David S. Hall, Ph.D. (U. Ky.), *Associate Professor of Community Medicine and Sociology.*

John E. Hall, Ph.D. (Purdue U.), *Professor of Microbiology.*

Sobisca S. Hall, M.D. (U. Chicago), *Clinical Professor Emeritus of Surgery (Otolaryngology).*

Trevelyn F. Hall, II, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology).*

William L. Hall, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*

John L. Hankinson, M.S. (Ga. Tech.), *Assistant Professor (part-time) of Physiology and Biophysics.*

Kerry Harbert, B.S. (WVU), *Instructor in Medical Technology.*

Charles L. Harris, Ph.D. (U. Ill.), *Associate Professor of Biochemistry.*

Willard S. Harris, M.D. (NYU), *Professor of Medicine; Chairman, Division of Cardiology.*

Hollister S. Harrison, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics.*

John M. Hartman, M.D. (U. Md.), *Clinical Associate Professor of Medicine.*

Sherman E. Hatfield, M.D. (Med. C. Va.), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Harrison B. Hawley, M.D. (Med. C. Va.), *Assistant Professor of Medicine, Charleston Division.*

William Hayes, M.D. (Tulane U.), *Clinical Associate Professor of Radiology (Diagnostic).*

George A. Hedge, Ph.D. (Stanford U.), *Professor and Chairman of Physiology and Biophysics.*

Elwood H. Heilman, M.D. (U. Okla.), *Clinical Assistant Professor of Surgery (Orthopedics).*

Peter L. Hein, M.D. (Georgetown U.), *Professor of Behavioral Medicine and Psychiatry.*

Charles A. Heiskell, M.D. (Northwestern U.), *Clinical Instructor in Surgery (General).*

Marta J. Henderson, M.S. (WVU), *Associate Professor of Medical Technology.*

Alex Hendrick, M.D. (U. London), *Instructor (part-time) in Medicine (Hematology); Physician, Health Service.*

David J. Hendrick, M.D. (U. London), *Assistant Professor of Medicine (Pulmonary Medicine).*

William Henrick, M.D. (Jeff. Med. C.), *Assistant Professor of Anesthesiology.*

Charles D. Hershey, M.D. (U. Mich.), *Clinical Professor of Surgery (General).*

John W. Hesin, M.D. (Med. C. Va.), *Assistant Professor (part-time) of Family Practice; Physician, Health Service.*

Robert D. Hess, M.D. (Med. C. Va.) *Clinical Assistant Professor of Family Practice.*

William H. Hess, M.D. (WVU), *Assistant Professor of Anesthesiology.*

Robert W. Hibbard, M.D. (U. Tenn.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Rusi A. Hilloowala, Ph.D. (U. Ala.), *Associate Professor of Anatomy.*

Henry M. Hills, M.D. (U. Iowa), *Clinical Assistant Professor of Surgery (Orthopedics).*

Bette G. Hinton, M.D. (U. Louisville), *Instructor in Community Medicine.*

David E. Hinton, Ph.D. (U. Miss.), *Associate Professor of Anatomy.*

Paul Hlusko, M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry and Pediatrics, Charleston Division.*

Florence Hoback, M.D. (U. Md.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

William R. Hobbs, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Neurology, and Medicine.*

Thomas Hodous, M.D. (J. Hopkins U.), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine).*



Donald H. Hofreuter, M.D. (Columbia U.), *Clinical Assistant Professor of Family Practice*.  
Michael Hogan, M.D. (Albany Med. C.), *Associate Professor of Radiology (Diagnostic)*.  
Charles D. Holland, M.S.H.A. (Northwestern U.), *Coordinator, Research in Community Medicine*.  
Fred Holt, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.  
Jean Holter, B.S. (WVU), *Assistant Professor of Medical Technology*.  
Vera Holyman-Ayoubi, M.D. (WVU), *Clinical Assistant Professor of Pediatrics*.  
Thomas M. Howes, M.D. (Med. C. Va.), *Clinical Assistant Professor of Family Practice*.  
Michael B. Howie, M.D. (Trinity C.), *Assistant Professor of Anesthesiology*.  
Ellen E. Hrabovsky, M.D. (Vanderbilt U.), *Assistant Professor of Surgery (General) and Pediatrics*.  
Francis Huber, M.D. (U. Tenn.), *Clinical Assistant Professor of Anesthesiology*.  
Jacob C. Huffman, M.D. (Med. C. Va.), *Clinical Professor of Family Practice*.  
Robert T. Humphries, M.D. (U. Va.), *Clinical Assistant Professor Emeritus of Surgery (Orthopedics)*.  
Beatrice R. Hunter, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry*.  
David J. Hunter, M.B. (St. Andrews U.), *Associate Professor of Obstetrics and Gynecology*.  
John P. Hutton, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
Robert M. Hutton, M.D. (WVU), *Instructor in Surgery (Emergency Room)*.  
Ernest F. Hyde, M.D. (Harvard U.), *Clinical Assistant Professor of Medicine (Hematology)*.  
Steven Inger, Ph.D. (Bowl. Grn. St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
Barbara D. Ingersoll, Ph.D. (Penn. St. U.), *Assistant Professor of Behavioral Medicine and Psychiatry*.  
Rabindran Israel, M.B.B.S. (Stanley Med. C.), *Clinical Assistant Professor of Pediatrics*.  
Harry A. Jackson, M.D. (Med. C. Va.), *Clinical Associate Professor of Medicine*.  
Jacob Jacob, M.D. (Christ. Med. C.), *Clinical Assistant Professor of Medicine (Gastroenterology)*.  
Singanallur N. Jagannathan, Ph.D. (U. Bombay), *Associate Professor of Pathology and Biochemistry*.  
Abnash C. Jain, M.D. (Govt. Med. C., Patiala), *Professor of Medicine (Cardiology)*.  
Paul J. Jakubec, M.D. (U. Pitt.), *Clinical Associate Professor of Pediatrics*.  
George W. Jaquiss, M.D. (U. Kans.), *Clinical Associate Professor of Surgery (Otolaryngology)*.  
Joe N. Jarrett, M.D. (U. Penn.), *Clinical Professor of Family Practice*.  
Jesse J. Jenkins, III, M.D. (J. Hopkins U.), *Assistant Professor of Pathology*.  
Nancy Jo (Zablotsky) Jennings, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic)*.  
Douglas Jewson, M.D. (U. Minn.), *Clinical Assistant Professor of Medicine (Cardiology)*.  
Carl E. Johnson, M.D. (Northwestern U.), *Clinical Associate Professor Emeritus of Medicine*.  
Jerome G. Johnson, M.D. (U. Minn.), *Clinical Assistant Professor of Surgery (General)*.  
Barbara Jones, M.D. (U. Utah), *Professor and Assistant Chairwoman of Pediatrics*.  
David S. Jones, M.D. (Loyola U.), Ph.D. (U. Minn.), *Professor Emeritus of Anatomy*.  
Douglas Jones, M.D. (Vanderbilt U.), *Assistant Professor of Medicine, Charleston Division*.  
John E. Jones, M.D. (U. Utah), *Professor of Medicine (Metabolism and Endocrinology); Dean, School of Medicine*.  
Reverdy H. Jones, Jr., M.D. (U. Va.), *Clinical Associate Professor of Medicine*.  
Donald B. Kamerer, M.D. (Temple U.), *Clinical Associate Professor of Surgery (Otolaryngology)*.  
Stanley J. Kandzari, M.D. (WVU), *Associate Professor of Surgery (Urology)*.  
David A. Kappel, M.D. (WVU), *Clinical Assistant Professor of Surgery (General)*.  
Joseph Kassis, M.D. (Damascus U.), *Clinical Instructor in Surgery (Urology)*.  
Sam Katz, Ph.D. (Northwestern U.), *Associate Professor of Biochemistry*.  
Frank J. Keefer, M.D. (Geo. Wash. U.), *Clinical Assistant Professor of Obstetrics and Gynecology*.  
George M. Kellas, M.D. (U. Penn.), *Clinical Associate Professor of Family Practice*.

John F. Kelley, M.D. (McGill U.), *Professor of Behavioral Medicine and Psychiatry and Pediatrics.*

John W. Kennard, M.D. (Bowman Gray Sch. Med.), *Clinical Professor of Radiology (Diagnostic).*

Roland Kennedy, M.D. (Ohio St. U.), *Professor of Anesthesiology.*

Robert D. Kerns, Ph.D. (U. Pitt.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Richard S. Kerr, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*

James W. Kessel, M.D. (WVU), *Clinical Assistant Professor of Anesthesiology.*

Gordon Keyes, D.D.S. (U. Md.), *Assistant Professor of Pathology.*

Rashida A. Khakoo, M.D. (Makerere U.), *Assistant Professor of Medicine (Infectious Diseases).*

Nadir Khuri, M.D. (Am. U. Beirut), *Adjunct Instructor in Surgery (General).*

Donald L. Kimmel, Ph.D. (U. Mich.), *Professor Emeritus of Anatomy.*

Roger E. King, M.D. (WVU), *Clinical Associate Professor of Surgery (General).*

Billy E. Kirk, Ph.D. (Ohio St. U.), *Associate Professor of Microbiology.*

Rolf Kletzien, Ph.D. (U. Wisc.), *Associate Professor of Biochemistry.*

William G. Klingberg, M.D. (Wash. U., St. L.), *Professor and Chairman of Pediatrics.*

Ronica M. Kluge, M.D. (U. Fla.), *Associate Professor of Medicine; Chairwoman, Division of Infectious Diseases.*

Richard B. Knapp, M.D. (NY Med. C.), *Professor and Chairman of Anesthesiology.*

Thomas S. Knapp, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Jehoon Ko, M.D. (Korea U.), *Assistant Professor of Radiology (Diagnostic) and Neurology.*

Jae Myung Koh, M.D. (Kyung-pook Nat'l. U.), *Clinical Assistant Professor of Radiology.*

Martin J. Kommor, M.D. (U. S.C.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Donald M. Koppel, M.D. (U. Ill.), *Clinical Associate Professor of Medicine (Hematology).*

Ray Koppelman, Ph.D. (U. Chicago), *Professor of Biochemistry; Vice President-Energy Studies, Graduate Programs, and Research.*

Miroslav Kovacevich, M.D. (Med. Fac., U. Belgrad), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

John M. Krall, Ph.D. (U. Iowa), *Associate Professor of Community Medicine (Biostatistics).*

Reginald F. Krause, Ph.D. (U. Rochester) M.D. (U. Vt.), *Professor Emeritus of Biochemistry.*

Bernice Krumhansl, B.A. (N. Dame C.), *Clinical Instructor in Physical Therapy.*

Dharmendra Kumar, M.D. (Patna U.), *Instructor in Radiology (Diagnostic).*

Otto Kunst, M.D. (U. Miami), *Assistant Professor of Radiology (Diagnostic).*

Robert Kusminsky, M.D. (U. B. Aires), *Assistant Professor of Surgery, Charleston Division.*

Peter P. Ladewig, M.D. (U. Berlin), *Clinical Professor Emeritus of Pathology.*

Chi Whang Lai, Ph.D. (Purdue U.), *Assistant Professor of Radiology (Nuclear Medicine).*

James L. Lane, M.D. (U. Pitt.), *Clinical Associate Professor of Surgery (Urology).*

N. LeRoy Lapp, M.D. (Temple U.), *Professor of Medicine (Pulmonary Medicine).*

Norman J. Lass, Ph.D. (Purdue U.), *Associate Professor of Surgery (Otolaryngology) and Anatomy.*

Derrick L. Latos, M.D. (WVU), *Clinical Assistant Professor of Medicine (Nephrology).*

Jo S. Ledwell, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Alberto C. Lee, M.D. (U. S. Tomas), *Clinical Instructor in Medicine.*

Chi Meen Lee, M.D. (Kyung-pook Nat'l. U.), *Clinical Assistant Professor of Surgery (Urology).*

David P. Lee, M.D. (WVU), *Clinical Assistant Professor of Medicine.*

Ping Lee, Ph.D. (Duke U.), *Professor of Physiology and Biophysics.*

Johnsey L. Leef, M.D. (WVU), *Clinical Assistant Professor of Radiology.*

Warren D. Leslie, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Pediatrics.*

Robert A. Lewine, M.D. (U. Pitt.), *Clinical Associate Professor of Pediatrics.*

Mary L. Lewis, M.D. (Emory U.), *Clinical Associate Professor of Medicine.*

Rogello T. Lim, M.D. (U. S. Tomas), *Clinical Instructor in Medicine.*

Romeo Y. Lim, M.D. (U. Philippines), *Clinical Associate Professor of Surgery (Otolaryngology).*

David J. Lindert, M.D. (U. Ill.), *Clinical Assistant Professor of Surgery (Urology)*.  
Dale D. Lindholm, M.D. (U. Minn.), *Professor of Medicine (Nephrology)*.  
Harry T. Linger, M.D. (Med. C. Va.), *Clinical Instructor in Surgery (Ophthalmology)*.  
John C. Linton, Ph.D. (Kent St. U.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
Luis A. Loimil, M.D. (U. B. Aires), *Clinical Instructor in Surgery (Orthopedics)*.  
Betholene F. Love, M.S. (U. Okla.), *Professor and Associate Coordinator of Medical Technology*.  
Diana Loveless, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy*.  
Richard B. Lynch, M.D. (U. Penn.), *Associate Professor of Medicine (Clinical Immunology); Coordinator, Physicians Assistant Program*.  
Robert E. McCafferty, Ph.D. (U. Pitt.), *Professor of Anatomy; Research Associate in Obstetrics and Gynecology*.  
Roger McCauley, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
D. Verne McConnell, M.D. (Columbia U.), *Clinical Professor of Surgery (General)*.  
Lewis H. McConnell, M.D. (WVU), *Clinical Assistant Professor of Medicine*.  
Arch T. McCoy, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery (Urology)*.  
Leslie McCoy, M.D. (U. Mich.), *Clinical Associate Professor of Community Medicine*.  
Bradford McCuskey, M.D. (Jeff. Med. Col.), *Clinical Associate Professor of Surgery (Urology)*.  
Alexander McDonald, B.S. (Duke U.), *Lecturer (part-time) in Anatomy*.  
Donald E. McDowell, M.D. (Temple U.), *Clinical Professor of Surgery (General)*.  
Patricia McIntire, B.A. (Case-West. Res. U.), *Clinical Instructor in Physical Therapy*.  
Edward N. McIntosh, M.D. (Harvard U.), *Associate Professor of Obstetrics and Gynecology and Medicine (Metabolics-Endocrinology)*.  
Thomas W. McIntyre, Ph.D. (UCLA), *Associate Professor of Physiology and Biophysics*.  
Richard McKinley, M.D. (U. Iowa), *Clinical Instructor in Obstetrics and Gynecology*.  
Mary F. McKnight, B.A. (Columbia C., SC), *Clinical Instructor in Physical Therapy*.  
William O. McMillan, M.D. (Duke U.), *Clinical Associate Professor of Medicine*.  
Michael D. McNeer, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
Daniel B. MacCallum, M.D. (U. Ky.), *Clinical Instructor in Medicine*.  
Daniel A. Mairs, M.D. (Duke U.), *Clinical Associate Professor of Obstetrics and Gynecology*.  
Tony C. Majestro, M.D. (WVU), *Clinical Assistant Professor of Surgery (Orthopedics)*.  
Pervis C. Major, Ph.D. (WVU), *Assistant Professor (part-time) of Microbiology*.  
Indira Majumder, M.D. (S.C.B. Med. C.), *Clinical Instructor in Pediatrics*.  
Mary H. Malamisura, B.S. (U. Penn.), *Clinical Instructor in Physical Therapy*.  
Paul F. Malone, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology)*.  
Eric Mantz, M.D. (WVU), *Adjunct Instructor in Surgery (General)*.  
Gary J. Marcus, M.D. (WVU), *Clinical Assistant Professor of Pathology*.  
Robert Marshall, M.D. (Queen's U.), *Clinical Professor of Medicine (Cardiology)*.  
James D. Martin, M.D. (Vanderbilt U.), *Professor of Neurology*.  
Lawrence Martin, M.D. (WVU), *Instructor in Surgery (Emergency Room)*.  
Robert B. Martin, Ph.D. (WVU), *Assistant Professor of Surgery (Orthopedics)*.  
Orestes A. Martinez, M.D. (Fac. of Med., S. Fernando), *Associate Professor of Anesthesiology*.  
Stanley S. Masilamani, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine (Gastroenterology)*.  
Giovanni Mastrangelo, M.D. (U. Naples), *Clinical Assistant Professor of Pathology*.  
Phillip B. Mathias, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology)*.  
Michael G. Mawhinney, Ph.D. (WVU), *Associate Professor of Surgery (Urology) and Pharmacology*.  
Ward W. Maxson, M.D. (U. Mich.), *Clinical Associate Professor of Obstetrics and Gynecology*.  
Victor E. Mazzocco, M.D. (WVU), *Clinical Assistant Professor of Medicine (Metabolism-Endocrinology)*.  
Charles E. Meacci, M.S. (Boston U.), *Assistant Professor of Physical Therapy*.  
Elmaslias Menchavez, M.D. (Cebu Inst. Med.), *Clinical Instructor in Pediatrics*.



Catalino B. Mendoza, Jr., M.D. (Manila Centr. U.), *Clinical Associate Professor of Surgery (General)*.

Henry F. Mengoli, Ph.D. (Cath. U. Am.), *Associate Professor of Microbiology*.

James A. Merchant, M.D. (U. Iowa), *Associate Professor (part-time) of Medicine (Pulmonary Medicine) and Community Medicine*.

D. Franklin Milam, M.D. (U. Penn.), *Professor of Surgery; Chairman, Division of Urology*.

Philip R. Miles, Ph.D. (WVU), *Associate Professor (part-time) of Physiology and Biophysics*.

Ronald J. Millecchia, Ph.D. (Rockefeller U.), *Associate Professor of Physiology and Biophysics*.

Lawrence S. Miller, M.D. (U. Va.), *Clinical Professor of Surgery (Orthopedics)*.

Phyllis Miller, M.S.W. (Purdue U.), *Clinical Instructor in Behavioral Medicine and Psychiatry*.

Jovan Milutinovich, M.D. (Med. Fac. Zagreb), *Associate Professor of Medicine; Chairman, Division of Nephrology*.

Barbara I. Moidel, M.A. (West. Mich. U.), *Clinical Instructor in Surgery (Otolaryngology)*.

Dane W. Moore, Jr., M.S. (WVU), *Professor of Medical Technology*.

Richard Moran, B.S. (WVU), *Clinical Instructor in Physical Therapy*.

Walter H. Moran, M.D. (Harvard U.), *Professor of Surgery and Physiology and Biophysics; Director, Emergency Room*.

Michael Morehead, M.D. (WVU), *Clinical Assistant Professor of Neurology*.

David Z. Morgan, M.D. (Med. C. Va.), *Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Associate Dean, School of Medicine (Student Affairs)*.

Edwin J. Morgan, M.D. (U. Pitt.), *Associate Professor of Medicine and Behavioral Medicine and Psychiatry; Medical Director, Health Service*.

Mary L. Morgan, Ph.D. (Mich. St. U.), *Assistant Professor of Physiology and Biophysics*.

William C. Morgan, M.D. (U. Va.), *Clinical Associate Professor of Surgery (Otolaryngology)*.

William K. C. Morgan, M.B., Ch.C. (Sheffield U.), *Professor of Medicine; Chairman, Division of Pulmonary Medicine*.

Winfield Morgan, M.D. (Temple U.), *Professor of Pathology*.

Joseph B. Moriarty, Ph.D. (Fordham U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Joseph T. Morris, M.D. (Hahnemann Med. C.), *Clinical Associate Professor of Pediatrics*.

Thomas W. Mou, M.D. (U. Rochester), *Professor of Community Medicine and Medicine; Dean, Charleston Division, WVU Medical Center*.

Carlos Moya-Silva, M.D. (Nat. U. Colombia), *Assistant Professor of Pathology (Clinical)*.

Martha Kay Mullett, M.D. (WVU), *Assistant Professor of Pediatrics*.

Alfredo Munoz, M.D. (Centr. U., Ecuador), *Clinical Instructor in Pediatrics*.

Ganesan Nagarajan, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic)*.

David Nally, M.D. (WVU), *Assistant Professor of Surgery (Emergency Room)*.

Carlos A. Naranjo, M.D. (Med. C., Ecuador), *Clinical Assistant Professor of Surgery (Urology)*.

Mohammad Naseem, M.B.B.S. (K. Edward Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic)*.

William A. Neal, M.D. (WVU), *Associate Professor of Pediatrics; Chairman, Division of Pediatric-Cardiology*.

Ralph H. Nestman, M.D. (Ind. U.), *Clinical Associate Professor of Medicine*.

Benjamin Newman, M.D. (U. Beirut), *Clinical Associate Professor of Family Practice*.

Roger P. Nichols, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.

Robert J. Nottingham, M.D. (Wash. U.), *Clinical Professor of Pediatrics and Medicine*.

G. Robert Nugent, M.D. (U. Cincin.), *Professor of Surgery; Chairman, Division of Neurological Surgery*.

William E. Nunnery, M.D. (U. Kans.), *Clinical Assistant Professor of Surgery (Urology)*.

Stephen A. Olenchock, Ph.D. (WVU), *Assistant Professor (part-time) of Microbiology*.

Anthony J. Oliverio, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.

Wardak Omar, M.D. (Kabul U.), *Instructor in Medicine (Gastroenterology)*.

R. Wade Ortel, M.D. (U. Md.), *Professor of Medicine (General Internal), Wheeling Division*.

Carl E. Ortmeier, Ph.D. (Iowa St. U.), *Assistant Professor (part-time) of Community Medicine*.

Dennis O. Overman, Ph.D. (U. Mich.), *Associate Professor of Anatomy*.

Ahsen T. Ozarda, M.D. (U. Istanbul), *Clinical Professor of Radiology (Diagnostic)*.

Albert Paine, M.D. (Med. C. Va.), *Clinical Assistant Professor of Surgery (Otolaryngology)*.

Undong Pak, M.D. (Kyung-pook Nat'l. U.), *Clinical Assistant Professor of Obstetrics and Gynecology*.

Brojesh C. Pakrashi, M.D. (U. Calcutta), *Associate Professor of Medicine (Cardiology)*.

Antonio Palladino, M.D. (U. Naples), *Clinical Associate Professor of Obstetrics and Gynecology*.

Louis C. Palmer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology)*.

Joseph V. Panepinto, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Ruth Panepinto, Ph.D. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry*.

Paul J. Parsons, M.S. (WVU), *Assistant Professor of Physical Therapy*.

Richard S. Pataki, M.D. (NY Med. C.), *Clinical Assistant Professor of Pathology*.

Robert Patchell, M.D. (U. Toronto), *Clinical Professor of Obstetrics and Gynecology*.

David J. Pearson, Ph.D. (Victoria U.), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine)*.

Richard J. Pearson, M.D. (Cambridge U.), *Professor and Chairman of Community Medicine; Professor of Family Practice*.

Phillip J. Peters, M.D. (WVU), *Adjunct Instructor in Medicine (Metabolism-Endocrinology)*.

John J. Petronis, M.S. (WVU), *Assistant Professor of Physical Therapy*.

Carl Pfirman, B.S. (Penn. St. U.), *Clinical Instructor in Physical Therapy*.

Alfred H. Pfister, M.D. (Ind. U.), *Clinical Professor of Medicine*.

Ruth M. (Trotter) Phillips, M.D. (J. Hopkins U.), *Associate Professor of Pediatrics*.

Richard Piccirillo, M.D. (WVU), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine)*.

George E. Pickett, M.D. (McGill U.), *Clinical Professor of Medicine*.

Justus C. Pickett, M.D. (West Res. U.), *Clinical Professor Emeritus of Surgery (Orthopedics)*.

Carlin A. Pinkstaff, Ph.D. (Emory U.), *Associate Professor of Anatomy*.

Arthur L. Poffenbarger, M.D. (U. Md.), *Clinical Professor of Neurology*.

W. Warren Point, M.D. (Harvard U.), *Professor and Assistant Chairman of Medicine; Chief of Medicine, Charleston Division*.

Herbert H. Pomerance, M.D. (Columbia U.), *Professor of Pediatrics; Chief of Pediatrics, Charleston Division*.

Dennis K. Ponton, Ph.D. (WVU), *Assistant Professor of Biochemistry*.

Thomas R. Poole, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology*.

Robert Pope, Ph.D. (U. N.D.), *Assistant Professor of Anatomy*.

Robert S. Pore, Ph.D. (UCLA), *Associate Professor of Microbiology*.

Patricia B. Porterfield, M.S.W. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry*.

Alexius T. Portz, Ph.D. (U. Mich.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Thomas G. Potterfield, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics*.

Lee H. Pratt, M.D. (WVU), *Clinical Assistant Professor of Neurology*.

Eugene A. Quarrick, Ph.D. (Syracuse U.), *Professor of Behavioral Medicine and Psychiatry*.

Gale W. Rafter, Ph.D. (U. Wash.), *Professor of Biochemistry*.

Arunthathie Rajaratnam, M.B.B.S. (U. Ceylon), *Assistant Professor of Anesthesiology*.

Vadrevu Raju, M.B.B.S. (Andhira Med. C.), *Assistant Professor of Surgery (Ophthalmology)*.

Mary F. Rambo, B.S. (U. Pitt.), *Clinical Instructor in Physical Therapy*.

Mark J. Reasor, Ph.D. (J. Hopkins U.), *Assistant Professor of Pharmacology*.

Joseph B. Reed, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.

Robert J. Reed, M.D. (U. Penn.), *Clinical Assistant Professor of Surgery (General)*.

Robert B. Reger, M.S. (WVU), *Instructor (part-time) in Community Medicine*.

Charles E. Reier, Ph.D. (Jeff. Med. C.), *Clinical Professor of Anesthesiology*.

Martin D. Reiter, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Medicine*.

Ole W. Renick, M.D. (Med. C. Va.), *Instructor in Surgery (Otolaryngology)*.

Joseph J. Renn, III, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine)*.

Harold Resnick, Ph.D. (U. Iowa), *Professor (part-time) of Biochemistry.*

David Revell, M.D. (U. Vt.), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

Randall W. Reyer, Ph.D. (Yale U.), *Professor and Acting Chairman of Anatomy.*

Francisco Reyes, M.D. (U. Nicaragua), *Clinical Assistant Professor of Pathology.*

Joung Wye Rhee, M.D. (Seoul Nat. U.), *Clinical Assistant Professor of Pediatrics.*

Joe W. Rhudy, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*

John J. Rick, M.D. (U. Mich.), *Assistant Professor of Anesthesiology and Medicine; Director of Intensive Care Unit.*

Robert L. Robinson, Ph.D. (U. Kans.), *Professor of Pharmacology.*

Joan Robison, Ph.D. (U. Ga.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Satyabhlashi P. Rochlani, M.B.B.S. (U. Madras), *Associate Professor of Pathology.*

Jeanne A. Rodman, M.D. (U. Iowa), *Clinical Associate Professor of Anesthesiology.*

Nathaniel F. Rodman, M.D. (U. Penn.), *Professor and Chairman of Pathology.*

Dorris P. Rogers, Ph.D. (U. Tex.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

John S. Rogers, M.D. (Geo. Wash. U.), *Assistant Professor of Medicine (Hematology).*

Carl J. Roncaglione, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery (Orthopedics).*

Jean D. Ross, M.D. (Harvard U.), *Associate Professor of Pediatrics, Charleston Division.*

William Rossman, M.D. (Ind. U.), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

Alex J. Sabo, M.D. (WVU), *Clinical Assistant Professor of Pathology.*

Robert S. Salisbury, M.D. (WVU), *Clinical Assistant Professor of Pathology.*

Eugene Sander, Ph.D. (Cornell U.), *Professor and Chairman of Biochemistry.*

Ujjal Sandhu, M.B.B.S. (Calcutta Nat. Med. Inst.), *Clinical Instructor in Obstetrics and Gynecology.*

Michael Anthony Santer, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology).*

Paul D. Saville, M.D. (St. Geo. Med. Sch., London), *Clinical Professor of Medicine (Rheumatology).*

Martin Schein, Sc.D. (J. Hopkins U.), *Clinical Professor of Behavioral Medicine and Psychiatry (Biology).*

Merle S. Scherr, M.D. (U. Md.), *Clinical Associate Professor of Medicine.*

Gunter Schwarzbart, M.D. (U. Basel), *Clinical Assistant Professor of Surgery (General).*

Ronald R. Scobbo, M.D. (WVU), *Assistant Professor of Medicine and Behavioral Medicine and Psychiatry.*

Douglas Seaton, M.B. Ch.B. (Liverpool U.), *Adjunct Instructor in Medicine (Pulmonary Medicine).*

Narinder N. Sehgal, M.B.B.S. (Panjab U., India), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics and Gynecology, Charleston Division.*

Richard J. Seime, Ph.D. (U. Minn.), *Assistant Professor of Behavioral Medicine and Psychiatry.*

Harold Selinger, M.D. (N.Y. St. U. C. Med.), *Clinical Professor of Medicine.*

James K. Sexton, M.D. (Wake For. U.), *Clinical Associate Professor of Radiology (Diagnostic).*

Shailbala (Sheila) Shah, M.D. (Seth G. S. Med. C.), *Assistant Professor of Pathology.*

Stanley R. Shane, M.D. (U. Kans.), *Professor of Medicine; Chairman, Division of Endocrinology and Metabolism.*

Anne W. Sharpe, B.S. (WVU), *Assistant Professor of Medical Technology.*

George Shawkey, M.D. (Northwestern U.), *Clinical Assistant Professor of Pediatrics.*

Lauralee Sherwood, D.V.M. (Mich. St. U.), *Associate Professor of Physiology and Biophysics.*

Earle Shoub, B.S. (Poly. Inst. Brooklyn), *Associate Professor (part-time) of Anesthesiology.*

Jeffrey S. Shultz, M.D. (WVU), *Assistant Professor of Medicine; Acting Chief of Medicine, Wheeling Division.*

Leslie Simmons, M.D. (Tulane U.), *Clinical Associate Professor of Family Practice.*

William P. Sinclair, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice.*

Wilbur Z. Sine, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*



Purendra P. Sinha, M.B.B.S. (Patna U.), *Assistant Professor of Radiology (Radiation Therapy)*.

Joseph T. Skaggs, M.D. (U. Louisville), *Clinical Professor of Medicine*.

John M. Slack, Ph.D. (U. Minn.), *Professor Emeritus of Microbiology*.

Stephen T. Slack, Ph.D. (Penn. St. U.), *Assistant Professor of Radiology (Radiation Safety)*.

Clark K. Sleeth, M.D. (U. Chicago), *Professor of Medicine and Family Practice*.

David H. Smith, M.D. (U. Alberta), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

David J. Smith, Ph.D. (WVU), *Associate Professor of Anesthesiology and Pharmacology*.

James Smith, M.D. (U. Kans.), *Clinical Assistant Professor of Radiology (Diagnostic)*.

K. Madison Smith, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy*.

Larry C. Smith, M.D. (Med. C. Va.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Robert L. Smith, M.D. (U. Ill.), *Associate Professor of Community Medicine; Assistant Dean, School of Medicine (Continuing Education)*.

Irvin S. Snyder, Ph.D. (U. Kans.), *Professor and Chairman of Microbiology*.

Thomas M. Sodeman, M.D. (U. Va.), *Professor of Pathology; Chairman of Division of Clinical Pathology; Coordinator of Medical Technology*.

Seung Seek Sohn, M.D. (Yonsei U.), *Clinical Assistant Professor of Pathology*.

Chester Solez, M.D. (Harvard U.), *Clinical Associate Professor of Medicine*.

Irvin M. Sopher, M.D. (U. Md.), *Clinical Professor of Pathology*.

Suzanne S. Souther, B.S. (WVU), *Clinical Instructor in Physical Therapy*.

James T. Spencer, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Surgery (Otolaryngology)*.

Wayne Spiggle, M.D. (Med. C. Va.), *Clinical Instructor in Medicine (Hematology/Oncology)*.

Frederick Sporck, M.D. (WVU), *Instructor in Surgery (Otolaryngology)*.

Wilford W. Spradlin, M.D. (U. Va.), *Professor and Chairman of Behavioral Medicine and Psychiatry; Professor of Medicine (Behavioral and Ambulatory); Professor of Surgery; Associate Dean, School of Medicine (Graduate Medical Education)*.

Philip M. Sprinkle, M.D. (U. Va.), *Professor of Surgery; Chairman of Division of Otolaryngology*.

David J. Srebalus, Ed.D. (Ind. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry (Counseling and Guidance)*.

Edwin P. Stabins, M.D. (Cornell U.), *Clinical Associate Professor of Pediatrics*.

Michael F. Staggars, B.S. (WVU), *Clinical Instructor in Physical Therapy*.

Kathryn R. Stanko, B.S. (Sargent C.), *Clinical Instructor in Physical Therapy*.

Eugene L. Staples, M.H.A. (U. Minn.), *Associate Professor of Community Medicine; Clinical Associate Professor of Behavioral Medicine and Psychiatry; Director, University Hospital*.

Ellen F. Starkey, M.S. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry*.

Barbara St. Clair, B.S. (WVU), *Instructor in Physical Therapy*.

Larry J. Stemple, M.D. (WVU), *Clinical Assistant Professor of Surgery (Orthopedics)*.

Margaret Stemple, M.D. (Rush Med. C., U. Chicago), *Clinical Assistant Professor of Family Practice*.

Roy J. Stevens, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology*.

James M. Stevenson, M.D. (WVU), *Associate Professor and Assistant Chairman of Behavioral Medicine and Psychiatry; Chief of Behavioral Medicine and Psychiatry, Charleston Division*.

J. Clifford Stickney, Ph.D. (U. Minn.), *Professor Emeritus of Physiology and Biophysics*.

Robert E. Stitzel, Ph.D. (U. Minn.), *Professor and Assistant Chairman of Pharmacology*.

Robert E. Stone, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology*.

Charles W. Stratton, M.D. (U. Vt.), *Assistant Professor of Medicine (Infectious Diseases), Charleston Division*.

Ronald K. Stupar, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic)*.

Balusamy Subbiah, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine*.

Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), *Instructor in Pediatrics*.

Lois Svoboda, M.D. (U. Chicago), *Instructor (part-time) in Family Practice; Physician, Health Service*.

William B. Svoboda, M.D. (U. Chicago), *Associate Professor of Neurology and Pediatrics*.

Danna C. Swan, M.D. (WVU), *Instructor in Medicine; Physician, Health Service.*  
 Grover B. Swoyer, M.D. (Ohio St. U.), *Clinical Assistant Professor of Pathology.*  
 Zoltan Szalontay, M.D. (U. Zagreb), *Clinical Associate Professor of Radiology.*  
 Thomas J. Tarnay, M.D. (Columbia U.), *Professor of Surgery (General).*  
 Geoffrey Taylor, M.D. (U. Manchester), *Professor (part-time) of Medicine (Pulmonary Medicine).*  
 Mary Ellen Tekieli, Ph.D. (U. Okla.), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
 Erdogan Tercan, M.D. (Ankara U.), *Clinical Associate Professor of Anesthesiology.*  
 Marilyn M. Thatcher, B.A. (U. Tenn.), *Clinical Instructor in Pediatrics.*  
 Samuel Thatcher, B.S. (U. Tenn.), *Lecturer (part-time) in Anatomy.*  
 John A. Thomas, Ph.D. (St. U. Iowa), *Professor of Pharmacology; Associate Dean, School of Medicine (Administration).*  
 Herbert Thompson, Ph.D. (U. Kans.), *Assistant Professor of Microbiology.*  
 Horace B. Thompson, M.D. (U. Ala.), *Clinical Assistant Professor of Medicine.*  
 Robert Thompson, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Lawrence B. Thrush, M.D. (U. Penn.), *Clinical Instructor in Surgery (General).*  
 Robert Tomhave, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Joseph B. Touma, M.D. (Damascus U.), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
 Donald C. Trapp, M.D. (Temple U.), *Clinical Associate Professor of Surgery (Urology).*  
 John W. Traubert, M.D. (Ohio St. U.), *Professor and Chairman of Family Practice.*  
 John W. Trenton, M.D. (U. Penn.), *Clinical Professor of Surgery (General).*  
 Marjorie Ellen Tripp, M.D. (Yale U.), *Assistant Professor of Pediatrics (Pediatric Cardiology).*  
 Robert R. Trotter, M.D. (Temple U.), *Professor of Surgery; Chairman, Division of Ophthalmology.*  
 George P. Tryfiates, Ph.D. (Rutgers U.), *Associate Professor of Biochemistry.*  
 Patrick A. Tuckwiller, M.D. (U. Chicago), *Clinical Professor Emeritus of Medicine.*  
 Christopher C. Tully, M.D. (Med. C. Va.), *Professor of Family Practice; Chief, Family Practice, Charleston Division.*  
 Irma H. Ullrich, M.D. (U. Minn.), *Assistant Professor of Medicine (Metabolism-Endocrinology).*  
 Daniel Upthegrove, M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Pedro Urquilla, M.D. (U. El. Salv.), *Associate Professor of Pharmacology.*  
 Isidro P. Uy, M.D. (U. Santo Tomas), *Clinical Instructor in Pediatrics.*  
 Rodolfo R. Valencerino, M.D. (Far Eastern U.), *Clinical Assistant Professor of Pathology.*  
 Knox Van Dyke, Ph.D. (St. Louis U.), *Professor of Pharmacology.*  
 Edward J. VanLiere, M.D. (Harvard U.), Ph.D. (U. Chicago), *Professor Emeritus of Physiology and Biophysics.*  
 Louise E. VanRiper, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Angel Vazquez-Lopez, M.D. (U. P. Rico), *Professor of Family Practice and Pediatrics.*  
 Robert W. Veltri, Ph.D. (WVU), *Professor of Microbiology and Surgery (Otolaryngology).*  
 Purushattam L. Verma, M.D. (Nagpur U.), *Clinical Instructor in Pediatrics.*  
 Herbert G. Voelz, Dr. Rer. Nat. (U. Greifswald, Ger.), *Professor of Microbiology.*  
 Edward Voss, Jr., M.D. (U. Buffalo), *Clinical Associate Professor of Surgery (General).*  
 Robert H. Waldman, M.D. (Wash. U., St. L.), *Professor and Chairman of Medicine; Professor of Behavioral Medicine and Psychiatry.*  
 David K. Walker, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Elizabeth R. Walker, Ph.D. (WVU), *Assistant Professor of Anatomy.*  
 Nancy Ann Chase Wanderman, M.D. (SUNY), *Associate Professor of Pediatrics, Charleston Division.*  
 Richard Wanderman, M.D. (SUNY), *Clinical Assistant Professor of Pediatrics.*  
 Albert L. Wanner, M.D. (U. Pitt.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Stephen D. Ward, M.D. (U. Pitt.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Herbert E. Warden, M.D. (U. Chicago), Ph.D. (U. Ill.), *Professor of Surgery*.

Carolyn Sue Warren, M.D. (Case West. Res. U.), *Clinical Assistant Professor of Medicine*.

Stafford G. Warren, M.D. (U. Rochester), *Clinical Associate Professor of Medicine*.

Alvin L. Watne, M.D. (U. Ill.), *Professor and Chairman of Surgery; Professor of Behavioral Medicine and Psychiatry*.

Charles W. Weart, Pharm. D. (Phila. Col. of Pharm.), *Assistant Professor of Family Practice*.

Deleno Webb, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Kenneth C. Weber, Ph.D. (U. Minn.), *Professor (part-time) of Physiology and Biophysics*.

Harry S. Weeks, Jr., M.D. (U. Md.), *Clinical Professor of Anesthesiology*.

Charles C. Weise, M.D. (U. Penn.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Raymond B. Weiss, M.D. (U. Minn.), *Associate Professor of Medicine (Hematology/Oncology)*.

Roland J. Weisser, Jr., M.D. (WVU), *Assistant Professor of Family Practice*.

William A. Welton, M.D. (U. Md.), *Professor of Medicine; Chairman of Dermatology*.

Stanley Wendkos, M.S. (Temple U.), *Clinical Instructor in Physical Therapy*.

David P. Westfall, Ph.D. (WVU), *Professor of Pharmacology*.

Charles E. Whitaker, M.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (Otolaryngology)*.

Charles A. White, M.D. (U. Utah), *Professor and Chairman of Obstetrics and Gynecology*.

Frederick R. Whittlesey, M.D. (West. Res. U.), *Clinical Professor Emeritus of Medicine*.

Kenneth L. Wible, M.D. (Jeff. Med. C.), *Associate Professor of Pediatrics*.

Isiah A. Wiles, M.D. (U. Chicago), *Clinical Associate Professor Emeritus of Community Medicine*.

James H. Wiley, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery (Orthopedics)*.

Ronald L. Wilkinson, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.

David H. Williams, M.D. (Cornell U.), *Clinical Associate Professor of Radiology (Diagnostic)*.

Patrick C. Williams, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology*.

T. Walley Williams, Ph.D. (U. Pitt.), *Professor Emeritus of Anatomy*.

Robert S. Wilson, M.D. (J. Hopkins U.), *Clinical Assistant Professor of Surgery (Orthopedics)*.

George H. Wirtz, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry*.

David Withersty, M.D. (WVU), *Associate Professor and Assistant Chairman of Behavioral Medicine and Psychiatry; Associate Professor of Medicine*.

Loraine Withersty, M.D. (WVU), *Clinical Instructor in Obstetrics and Gynecology*.

John J. Wolf, Jr., M.D. (Wake For. U.), *Clinical Instructor in Pediatrics*.

Merrill Wymer, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic)*.

John J. Yazel, M.D. (Ohio St. U.), *Assistant Professor of Medicine and Behavioral Medicine and Psychiatry; Physician, Health Service*.

David B. Yelton, Ph.D. (U. Mass.), *Assistant Professor of Microbiology*.

Jeffrey M. Yost, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic)*.

George L. Zaldivar, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine)*.

John F. Zeedick, M.D. (U. Pitt.), *Clinical Associate Professor of Anesthesiology*.

Bernard Zimmermann, M.D. (Harvard U.), Ph.D. (U. Minn.), *Professor of Surgery*.

## School of Nursing

Linda Belis, R.N., M.S.N. (WVU), *Instructor*.

Shirley Bell, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.

Ruth Bohrer, R.N., M.S. (Case-West. Res. U.), *Instructor*.

Mary Frances Borgman, R.N., M.Ed. (Duquesne U.), *Associate Professor; Acting Chairperson, Senior Faculty*.



Sally Bryan, R.N., M.S.(Hyg.) (U. Pitt.), *Assistant Professor*.  
 Mary Jo Butler, R.N., M.S. (U. Md.), *Assistant Professor; Chairperson, Charleston Program*.  
 Anita Chinnici, R.N., M.S. (U. Del.), *Instructor (part-time)*.  
 Patricia Diehl, R.N., M.A. (WVU), *Associate Professor*.  
 Lillian Earle, R.N., M.S. (Cath. U. Am.), *Instructor*.  
 Marilyn A. Jarvis-Eckert, M.D. (U. Minn.), *Associate Professor (part-time)*.  
 O. B. Fawley, M.S.W. (WVU), *Instructor (part-time)*.  
 Janice Friend, B.S. (WVU), *Clinical Instructor (part-time)*.  
 Anne Gagnon, R.N., M.P.H. (U. Pitt.), *Assistant Professor*.  
 Virginia Hagemann, R.N., A.M. (U. Chicago), *Professor*.  
 Debra Harr, R.N., M.P.H. (J. Hopkins U.), *Instructor*.  
 Kathleen Heverly, R.N., M.S.N. (Boston U.), *Instructor*.  
 Jean Hoff, R.N., M.P.H. (U. Pitt.), *Associate Professor; Assistant to the Dean*.  
 Joan Howard, R.N., M.S.N. (U. Penn.), *Assistant Professor*.  
 Judy Humphries, R.N., M.S., J.D. (C. Wm. & Mary), *Assistant Professor*.  
 Annette James, R.N., M.S.N.Ed. (U. Rochester), *Assistant Professor (part-time)*.  
 Lorita Jenab, R.N., Ed.D. (Columbia U.), *Professor and Dean*.  
 Christina Joy, R.N., B.S. (Ohio St. U.), *Instructor*.  
 Judith Kandzari, R.N., M.A. (WVU), *Instructor (part-time)*.  
 Nancy Koontz, R.N., M.S.N. (U. Md.), *Associate Professor*.  
 Barbara Limandri, R.N., M.S.N. (Cath. U. Am.), *Instructor*.  
 Gaynelle McKinney, R.N., M.S.N.Ed. (Ind. U.), *Professor; Chairperson, Continuing Education*.  
 Virginia Mahaven, B.S.N. (Ohio St. U.), *Clinical Instructor*.  
 Margaret Marcinek, R.N., M.S. (U. Md.), *Assistant Professor*.  
 Kathleen Marsland, R.N., M.S. (U. Colo.), *Assistant Professor*.  
 Annette Massey, R.N., M.S.N. (Yale U.), *Associate Professor*.  
 Karen Miles, B.S. (WVU), *Instructor*.  
 Mary Minderhout, R.N., M.S. (U. Minn.), *Instructor (part-time), Charleston Division*.  
 Marsha Mitchell, B.S. (Alderson-Broadbudds C.), *Clinical Instructor (part-time)*.  
 Lois O'Kelley, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.  
 Lynne Ostrow, R.N., M.S. (U. Cal.), *Assistant Professor*.  
 Dorothy Petrowski, R.N., M.P.H., Ph.D. (U. Md.), *Associate Professor*.  
 Jacqueline Riley, R.N., M.N. (U. Fla.), *Assistant Professor*.  
 Martha Rock, R.N., M.S.N. (Ohio St. U.), *Assistant Professor; Acting Chairperson, Sophomore Faculty*.  
 Anne Rockenstein, R.N., M.S.N.Ed. (Cath. U. Am.), *Assistant Professor*.  
 Barbara Shaw, R.N., M.S.N. (U. Penn.), *Assistant Professor; Chairperson, Junior Faculty*.  
 Jane Shrewsbury, R.N., M.N.Ed. (U. Pitt.), *Assistant Professor*.  
 Natalie Stafford, R.N., M.N. (U. Pitt.), *Associate Professor*.  
 Fredona Stenger, R.N., M.S.N. (Boston U.), *Associate Professor*.  
 Phyllis Tyzenhouse, R.N., M.S.(Hyg.) (U. Pitt.), *Associate Professor (part-time)*.  
 Beverly Zinn, B.S. (WVU), *Clinical Instructor*.

## School of Pharmacy

Scot A. Anderson, B.S. (WVU), *Clinical Instructor*.  
 John A. Angotti, B.S. (WVU), *Clinical Instructor*.  
 Irma M. Anido, B.S. (WVU), *Instructor in Pharmacy*.  
 H. John Baldwin, Ph.D. (Purdue U.), *Associate Professor of Pharmacy Administration*.  
 James D. Bartsch, B.S. (U. Wisc.), *Clinical Instructor*.  
 David P. Bell, B.S. (WVU), *Clinical Instructor*.  
 John U. Bell, Ph.D. (U. Dalhousie), *Assistant Professor (part-time) of Pharmacology*.  
 N. S. Bovenizer, B.S. (Ohio N. U.), *Clinical Instructor*.  
 Calvin C. Brister, Ph.D. (U. Miss.), *Associate Professor of Pharmacy*.  
 Nicholas H. Choulis, Ph.D. (U. London), *Professor of Pharmaceutics*.  
 Harry A. Comm, B.S. (WVU), *Clinical Instructor*.  
 Stephen D. Crawford, B.S. (WVU), *Clinical Instructor*.

Scott R. Criss, B.S. (WVU), *Clinical Instructor*.  
 Betty M. Daniels, M.S. (U. N.C.), *Associate Professor (part-time) of Hospital Pharmacy*.  
 Judith M. Deglin, Pharm.D. (Phila. C. Pharm.), *Assistant Professor of Clinical Pharmacy*.  
 Terry E. Edgell, B.S. (U. Conn.), *Clinical Instructor*.  
 Barbara J. Gastineau, B.S. (WVU), *Clinical Instructor*.  
 Jack E. Fruth, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Kenneth H. Gianettino, B.S. (WVU), *Clinical Instructor*.  
 Douglas L. Gill, B.S. (WVU), *Instructor in Pharmacy*.  
 Harry A. Goodykoontz, B.S. (WVU), *Clinical Instructor*.  
 John W. Griffith, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Willard S. Griffith, B.S. (Cincin. C. Pharm.), *Clinical Instructor*.  
 E. K. Hammond, Pharm. D. (U. Mich.), *Clinical Instructor*.  
 Harold H. Harper, M.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration*.  
 Robert E. Hickman, B.S. (U. Cincin.), *Clinical Instructor*.  
 L. Dean Holmes, B.S. (WVU), *Clinical Instructor*.  
 Stephen A. Howard, Ph.D. (U. Mich.), *Assistant Professor of Pharmacy*.  
 Robert H. Hoy, Pharm.D., (U. Cal.), *Assistant Professor of Clinical Pharmacy*.  
 Arthur I. Jacknowitz, Pharm.D. (Phila. C. Pharm.), *Assistant Professor of Clinical Pharmacy*.  
 Warren L. Larson, M.S. (U. Kans.), *Clinical Instructor*.  
 James Kai-Jin Lim, Ph.D. (U. N.C.), *Professor of Pharmaceutics*.  
 Robert T. Lindsay, M.S. (Mass. C. Pharm.), *Clinical Instructor*.  
 Buford T. Lively, M.S. (Marshall U.), *Lecturer in Pharmacy*.  
 Robert B. Lowe, Pharm.D. (U. Mich.), *Clinical Associate Professor*.  
 Daniel Lusk, B.S. (WVU), *Clinical Instructor*.  
 Louis A. Luzzi, Ph.D. (U. R.I.), *Dean and Professor of Pharmaceutics*.  
 Joseph K. H. Ma, Ph.D. (Duquesne U.), *Assistant Professor of Medicinal Chemistry*.  
 Carl J. Malanga, Ph.D. (Fordham U.), *Associate Professor of Pharmacy*.  
 Mary Lou Malanga, B.S. (Fordham U.), *Clinical Instructor*.  
 Carroll Martin, B.S. (WVU), *Clinical Instructor*.  
 Louis C. Martinelli, Ph.D. (U. Cal.), *Coordinator of Clinical Pharmacy and Associate Professor*.  
 John W. Mauger, Ph.D. (U. R.I.), *Associate Professor of Pharmacy*.  
 Ronald W. Meredith, B.S. (WVU), *Clinical Instructor*.  
 Vernon R. Midcap, B.S. (WVU), *Clinical Instructor*.  
 John E. Miller, B.S. (WVU), *Clinical Instructor*.  
 Kenneth Muha, B.S. (U. Ga.), *Clinical Instructor*.  
 Donn Neurman, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Frank D. O'Connell, Ph.D. (Purdue U.), *Assistant Dean and Professor of Pharmacognosy*.  
 John P. O'Donnell, Ph.D. (U. Iowa), *Assistant Professor of Medicinal Chemistry*.  
 Robert B. Pierce, B.S. (WVU), *Clinical Instructor*.  
 John P. Plummer, B.S. (WVU), *Clinical Instructor*.  
 Terrence S. Prettyman, B.S. (WVU), *Clinical Instructor*.  
 Woodrow J. Proveaux, Pharm.D. (U. Mich.), *Assistant Professor of Clinical Pharmacy*.  
 David A. Riley, Ed.D. (U. Ga.), *Coordinator of Continuing Education and Assistant Professor*.  
 Harry Scott, B.S. (WVU), *Clinical Instructor*.  
 A. Ray Shaw, B.S. (WVU), *Clinical Instructor*.  
 Clara Fay G. Skarzenski, B.S. (WVU), *Instructor in Pharmacy*.  
 Benton B. Smith, B.S. (WVU), *Clinical Instructor*.  
 David K. Solomon, Pharm.D. (U. Tenn.), *Clinical Instructor*.  
 Everett B. Stanley, B.S. (WVU), *Clinical Instructor*.  
 Gilbert A. Steiner, Pharm.D. (Wayne St. U.), *Assistant Professor of Clinical Pharmacy*.  
 Eugene S. Stratford, Ph.D. (Ohio St. U.), *Associate Professor of Medicinal Chemistry*.  
 Basil G. Swisher, M.S. (WVU), *Clinical Instructor*.  
 Edward A. Toompas, B.S. (WVU), *Clinical Instructor*.  
 Monika Tonkovich, Pharm.D. (SUNY), *Clinical Instructor*.  
 John F. Tourville, Pharm.D. (SUNY), *Assistant Professor of Clinical Pharmacy*.

Peter Vladimery, B.S. (WVU), *Clinical Instructor*.  
 Sarah Z. Wallace, B.S. (WVU), *Clinical Instructor*.  
 C. Wayne Weart, Pharm.D. (Phila. C. Pharm.), *Assistant Professor of Clinical Pharmacy*.  
 Arlie A. Winters, B.S. (WVU), *Clinical Instructor*.  
 Albert F. Wojcik, Ph.D. (U. Pitt.), *Professor of Pharmacy Administration*.  
 Irvin Van Meter, B.S. (WVU), *Clinical Instructor*.  
 Fred L. Zicafoose, B.S. (WVU), *Clinical Instructor*.

## Medical Center Staff

Margaret P. Abbott, M.P.H. (U. Minn.), *Director, Dietetics Department, University Hospital*.  
 Marguerite E. Abel, B.S. (U. Ill.), *Assistant Librarian*.  
 John Ambrose, *Superintendent, Maintenance, Medical Center*.  
 Leland M. Bowerman, *Medical Photography Supervisor*.  
 Diane L. Buckner, M.S. (Tuskegee Inst.), *Associate Director, Dietetics Department, University Hospital*.  
 Douglas A. Clark, M.H.A. (U. Minn.), *Associate Director and Clinic Manager, University Hospital*.  
 William S. Crislip, *Medical TV Supervisor*.  
 Glenn D. Crowe, B.A. (U. N.C.), *Assistant to Vice President—Health Sciences*.  
 Betty M. Daniels, M.S. (U. N.C.), *Chief, Pharmacy and Central Supply Services, University Hospital*.  
 Charles E. Flink, M.B.A. (WVU), *Assistant Director, University Hospital*.  
 Elizabeth S. Furfari, B.S.J. (WVU), *Assistant Information Officer*.  
 Harold H. Harper, M.S. (WVU), *Assistant to Vice President—Health Sciences*.  
 Don E. Killen, M.S.W. (U. Pitt.), *Director, Social Services, University Hospital*.  
 Linda M. Jacknowitz, M.S.L.S. (SUNY), *Audiovisual Librarian*.  
 David Loretta, B.S. (Fairmont St. C.), *Medical Records Supervisor*.  
 Lee E. McIntyre, *Supervisor, Electronics Laboratory*.  
 Kathleen A. Moore, B.S. (Alderson-Broadus C.), *Associate Director, Nursing Service, University Hospital*.  
 Anna Moson, M.A. (U. Pitt.), *Director, Nursing Service, University Hospital*.  
 Robert L. Murphy, M.S.L.S. (Cath. U. Am.), *Librarian*.  
 Irene J. Roby, *Assistant to the Dean of Admissions and Records*.  
 Sue Smallwood, B.S. (W. Va. Wesl. C.), *Associate Director, Dietetics Department*.  
 Vicky R. Stock, M.S.L.S. (Case-West. Res. U.), *Technical Services Librarian*.  
 Steven Teich, M.S.L.S. (U. Md.), *Network Librarian*.  
 J. Richard Toren, B.S.J. (WVU), *Associate Director, University Relations/Medical Center News Service*.  
 Bernard G. Westfall, M.S. (WVU), *Associate Director, Finance and Systems, University Hospital*.  
 Mary Ellin Wylie, A.B. (WVU), *Information Officer*.



# Health Science Programs At West Virginia University

## School of Dentistry

	<i>Bachelor</i>	<i>Master</i>	<i>Doctorate</i>
Dental Hygiene .....	B.S.		
Dentistry .....			D.D.S.
Orthodontics .....		M.S.	

## School of Medicine

Anatomy .....	M.S.	Ph.D.
Biochemistry .....	M.S.	Ph.D.
Medical Technology .....	B.S.	M.S.
Medicine .....		M.D.
Microbiology .....	M.S.	Ph.D.
Pharmacology .....	M.S.	Ph.D.
Physical Therapy .....	B.S.	
Physiology and Biophysics .....	M.S.	Ph.D.

## School of Nursing

Nursing .....	B.S.	M.S.N.
---------------	------	--------

## School of Pharmacy

Pharmaceutical Sciences .....	M.S.	Ph.D.
Pharmacy .....	B.S.	

## University Hospital

Medical Graduate Residencies	
Radiologic Technology .....	Certificate



West Virginia University Medical Center

1978-79 Medical Center Catalog  
West Virginia University  
Office of Admissions and Records  
Morgantown, WV 26506

West Virginia University Bulletin  
Second Class Postage Paid at  
Morgantown, WV 26506

Entered at Morgantown, WV  
as second-class matter under  
Act of August 24, 1912





# Medical Center Catalog

1979-80

## West Virginia University Bulletin





University Hospital.

COVER: Pylons at the entrance of the Basic Sciences Building at the WVU Medical Center depict milestones in health-sciences history.

**West Virginia University  
Medical Center  
1979-80 Catalog**

---

**Medical Center Basic Sciences  
School of Dentistry**

Dental Hygiene

**School of Medicine**

Medical Technology

Physical Therapy

**School of Nursing**

**School of Pharmacy**



*West Virginia University is an Equal Opportunity-Affirmative Action employer. In compliance with Federal Executive Order No. 11246 as amended, Title VII of the Civil Rights Act, West Virginia Human Rights Act Title IX (Educational Amendments of 1972), Sections 503 and 504 of the Rehabilitation Act of 1973, and other applicable laws and regulations, the University provides equal opportunity to all prospective and current members of the student body, faculty, and staff on the basis of individual qualifications and merit without regard to race, sex, religion, age, national origin, or handicap, as identified and defined by law.*

*The University neither affiliates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, color, age, religion, sex, national origin, or handicap, as defined by applicable laws and regulations.*

—Office of the President

## West Virginia Board of Regents

950 Kanawha Boulevard, East  
Charleston, WV 25301

Earle T. Andrews, Berkeley Springs  
Forrest L. Blair, Walker  
Andrew L. Clark, Princeton  
Sue Seibert Farnsworth, Wheeling  
Paul J. Gilmer, Charleston  
Edward H. Greene, Huntington  
Russell L. Isaacs, Charleston  
Albert M. Morgan, Morgantown  
John W. Saunders, Beckley  
Francis K. Aldred, ex officio, Huntington  
David K. Hendrickson, ex officio, Parkersburg  
Daniel B. Taylor, ex officio, Charleston  
Ben L. Morton, *Chancellor*, Charleston

## West Virginia University Advisory Board

Office of the President  
Morgantown, WV 26506

Charles C. Wise, Jr., *Chairman*, Charleston  
Paul B. Martin, *Vice Chairman*, Martinsburg  
Lea E. Anderson, Shinnston  
J. Reginald Dietz, Weirton  
James H. Harless, Gilbert  
Richard A. Raese, Morgantown  
Fred R. Toothman, Huntington  
Harold J. Shamberger, *Secretary*  
Gene A. Budig, *President*

West Virginia University Bulletin (USPS 676-980)

Series 79, No. 9-3, March, 1979

Issued Monday, Wednesday, and Friday

Second-class postage paid at Morgantown, WV 26506

# Contents

University Calendar, 1979-80 .....	4
West Virginia University Medical Center .....	5
University Hospital .....	6
Radiologic Technology .....	6
Coordinated Undergraduate Dietetics Program .....	6
Dental Clinic .....	7
University Health Service .....	7
Library .....	7
Admissions .....	7
Health Science Programs at WVU .....	13
Fees and Expenses .....	13
Regulations Affecting Degrees .....	20
Medical Center Basic Sciences .....	34
Anatomy .....	34
Biochemistry .....	37
Conjoined Basic Sciences Courses .....	38
Microbiology .....	39
Pathology .....	42
Pharmacology and Toxicology .....	42
Physiology and Biophysics .....	45
School of Dentistry .....	49
Doctor of Dental Surgery Program .....	49
Endodontic Program .....	61
Orthodontic Program .....	63
Dental Hygiene Program .....	64
School of Medicine .....	69
Medical Technology Undergraduate Program .....	82
Division of Physical Therapy .....	88
School of Nursing .....	93
School of Pharmacy .....	102
Faculty and Staff .....	112

Edited by Stanley J. Nels,  
*Associate University Editor*

# University Calendar, 1979-80

## Summer Sessions, 1979

May 21, Monday	Registration, First Summer Session
May 22, Tuesday	First Classes
May 28, Monday	Memorial Day Recess
June 29, Friday	Last Classes
June 29, Friday	Registration, Second Summer Session
July 2, Monday	First Classes
July 4, Wednesday	Independence Day Recess
August 7, Friday	Last Classes

## First Semester, 1979-80

August 23, 24, Thursday and Friday	Freshman Orientation
August 24, Friday	Registration
August 27, Monday	First Classes
September 3, Monday	Labor Day Recess
October 9, Tuesday	Faculty Assembly Meeting
October 12, Friday	Mid-Semester
October 12, Friday	Mid-Semester Reports Due
November 17, Saturday, to November 25, Sunday, incl.	Thanksgiving Recess
December 14, Friday	Last Classes
December 17, Monday, to December 22, Saturday, incl.	Final Examinations
December 23, Sunday, to January 13, Sunday, incl.	Christmas Recess

## Second Semester, 1979-80

January 11, Friday	Registration
January 14, Monday	First Classes
February 7, Thursday (not a holiday)	West Virginia University Day
February 18, Monday	Washington's Birthday Recess
February 29, Friday	Mid-Semester
February 29, Friday	Mid-Semester Reports Due
March 29, Saturday, to April 6, Sunday, incl.	Spring Recess
April 7, Monday	Easter Recess
April 8, Tuesday	Faculty Assembly Meeting
May 2, Friday	Last Classes
May 5, Monday, to May 10, Saturday, incl.	Final Examinations
May 12, Monday	Grade Report for all Graduates Due in Dean's Office
May 13, Tuesday	Dean's Reports of Graduates Due in Office of Admissions and Records
May 17, Saturday	Alumni Day
May 18, Sunday	Commencement

*The academic year is divided into two semesters of approximately seventeen weeks and two summer sessions.*



# West Virginia University Medical Center

West Virginia University Medical Center is the keystone of a statewide structure for educating health professionals and improving the health of all West Virginians. It houses schools of dentistry, medicine, nursing, pharmacy, the basic sciences, and a 440-bed teaching hospital. Allied health professionals also are educated here. In the two decades since it was established, total enrollment has neared the 1,500 mark.

It is the center, too, of statewide continuing education programs and a referral center for physicians and other health professionals in all sections of West Virginia. Telephone consultations on a two-hour callback basis, with complete followup, are available to physicians statewide.

Until 1960, pharmacists were the only health professionals who could obtain all their education at the state university. Medicine offered only a two-year program, and nursing and dentistry none. The transition began in 1951 when the Legislature authorized construction of a Medical Center and levied a penny-a-bottle tax on soft drinks to provide basic financing.

The Medical Center was planned as a single structure—Basic Sciences Building and University Hospital under one roof—on the Evansdale Campus north of the WVU Downtown Campus. The Basic Sciences portion opened in 1957 and first degrees were awarded in the early 1960s. Dentistry now enrolls 225 students, medicine 335, and nursing more than 400 in four-year programs; pharmacy 215 in a five-year course. Dental hygiene, medical technology, and physical therapy students number more than 185.

In 1972, WVU and the Charleston Area Medical Center—the state's largest hospital complex—began a partnership to develop medical and other health science programs. They were based in hospitals and other facilities already in place, but in 1977 a new \$6 million Medical Education Building was opened. It serves as the center for the clinical education programs. The Charleston Division of the WVU Medical Center expands both the patient base and student capacity for WVU's health sciences educational programs. It serves students in dentistry, medicine, nursing, pharmacy, and allied health fields, in addition to offering specialty training.

In 1974 the WVU School of Medicine established a Wheeling Division in cooperation with Ohio Valley General Hospital and Wheeling Hospital. The program is overseen by a joint Wheeling Area Medical Education Committee and offers elective opportunities for fourth-year students and postgraduate specialty training.

At the WVU Medical Center, as well as its Charleston Division and the School of Medicine's Wheeling Division, equal emphasis is given to teaching, research, and service—the pillars of sound health sciences education. Instruction is closely integrated among the health sciences, and there is a continuous search for improved ways of teaching.

Nonacademic policies and regulations affecting students are summarized in the *Student Handbook*. Every student is urged to obtain a copy of the *Student Handbook* from the Office of Student Educational Services, 205 Moore Hall.

## University Hospital

West Virginia University Hospital is a 440-bed referral center where education of students and advancement of knowledge goes hand in hand with the best in medical care. It is the hub of the Medical Center complex, providing the training ground where students learn the science and art of caring for patients.

Services in some 50 specialties are provided for bed patients as well as through clinics where more than 2,000 patients are seen weekly. Emergency Room service is provided around the clock, with more than 39,000 visits recorded annually.

Patients come to University Hospital and its clinics from all parts of West Virginia. They find expertise, equipment, and experience sometimes not available at other West Virginia hospitals, in areas such as transplant surgery, bladder pacemakers, linear accelerator radiation therapy, pediatric surgery, and cleft palate repair.

Clinic management operations have been streamlined to meet a growing public demand for efficient, quality, personalized health care. All internal medicine subspecialty clinics have been merged into a new General Medicine Clinic, providing a multidisciplinary team to handle almost any health problem.

## Radiologic Technology

A two-year course for radiologic technologists is offered by the Department of Radiology at University Hospital. This course is covered by lectures, group discussions, anatomy and physiology, radiologic physics, radiographic techniques, radiation therapy, radioisotopes, medical terminology, nursing procedures, administration and professional ethics, as these pertain to the training of X-ray technologists. Subjects taken do not carry college credits. Practical experience is gained on assigned tours of duty under the supervision of staff members.

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee.

Students of the Radiologic Technology course provide their own lodging and meals.

Upon completion of the program, a certificate is awarded each student who is then eligible to take the American Registry Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Training, Department of Radiology, West Virginia University Hospital, Morgantown, WV 26506

## Coordinated Undergraduate Dietetics Program

The Coordinated Undergraduate Dietetics Program is jointly sponsored by the Department of Family Resources (College of Human Resources and Education) and the University Hospital. The program offers diverse learning opportunities through academic courses in various divisions of the University and the Medical Center, and clinical experience in hospitals and community agencies.

After successful completion of the four-year program the student is awarded the degree of Bachelor of Science (B.S.) with a major in dietetics from the Department of Family Resources, College of Human Resources and Education. Clinical experience during the period of study enables the graduate to become a member of the American Dietetics Association without an additional internship period and eligible for the Registration Examination.

The student enters the program at the beginning of the junior year.

To qualify for application a candidate must have completed prescribed courses, with at least a 2.5 overall grade-point average—2.25 in science courses and 3.0 in nutrition and foods courses.

Final acceptance in the Coordinated Undergraduate Dietetics Program is subject to approval by the Admission Committee. An interview with the committee is required. *Enrollment is limited and priority will be given to West Virginia residents.*

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to a patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and a much needed service to several thousand patients annually.

## University Health Service

The University Health Service provides primary medical care for WVU students, faculty, and staff. Each regularly enrolled student pays a fee which covers medical consultation and treatment at the Health Service on the ground floor of University Hospital or in the Emergency Room. It also covers limited payment for inpatient care at University Hospital. A voluntary insurance plan is available to students to cover the cost of inpatient and outpatient services beyond primary care. Students are strongly advised to obtain it. Details are available in a Health Service brochure.

## Library

The Medical Center Library serves the students, faculty, and staff of the four schools and University Hospital. Its services are available to health professionals throughout West Virginia and to the general public when needed.

The library in the Basic Sciences Building contains approximately 110,000 bound volumes. More than 2,300 domestic and foreign periodicals are currently received.

The Medical Center Library and the central University Library maintain an active interlibrary loan service. Material not in either library may be borrowed from libraries in other cities.

The library is open, except on holidays, from 8:00 a.m. to midnight, Monday through Friday; from 9:00 a.m. to 5:00 p.m., Saturday; and from 2:00 p.m. to midnight, Sunday. Changes in scheduled hours are posted in advance.

## Admissions

### Admission to Medical Center Programs

Applicants for admission to any of the schools of the WVU Medical Center should write to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, who will furnish official blanks upon which formal application must be made.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified*



*West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

When requesting an application by letter for any of the Medical Center programs, the permanent home address must be given.

A \$10.00 application fee is required and must accompany the applications of all but Dental Hygiene students, who pay no application fee.

Any applicant who is refused admission, or who fails to enroll after acceptance, must re-apply in the regular manner if consideration for a subsequent year is desired.

Those applicants accepted for admission to any of the programs of the WVU Medical Center, except the Division of Dental Hygiene and out-of-state applicants to the School of Dentistry, are required to deposit \$50.00 before acceptance becomes official. Applicants accepted to the Division of Dental Hygiene deposit \$40.00, and out-of-state applicants accepted to the School of Dentistry deposit \$100. If the applicant enrolls in the program of the applicant's choice, the deposit is applied to first-semester tuition.

If an application for admission to the School of Medicine is withdrawn after the applicant has been offered a place and has submitted a deposit, such deposit may be refunded any time before March 30 of the year in which enrollment is anticipated, but will not be refunded after this date. Deposits submitted to all other programs are nonrefundable.

It is required that during the first semester of the first year all WVU Medical Center students must complete certain prescribed immunization and diagnostic procedures.

## Admission to WVU

Students may be considered for admission to WVU on the basis of graduation and transcripts from accredited high schools. High school graduates are required to present credit for 4 units of English and 1 unit of algebra. In addition, the health sciences require 1 unit of geometry.

(Special admissions regulations for individual Medical Center schools appear in subsequent pages of this *Catalog*.)

All students are required to take the American College Testing (ACT) Program tests and have the report of scores sent to WVU. This test is not used for admission, but for placement, and no other test may be substituted for it.

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools or from the College Scholarship Service, or the WVU Financial Aid Office. Submit only forms dated for the current academic year.

(*Your Guide to Financial Aid—West Virginia University* is available at the WVU Financial Aid offices, in the Mountainlair, Downtown Campus, and in 104 Basic Sciences Building, Medical Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.)

West Virginia high school students should obtain applications for admission from their high schools. Out-of-state students may write the WVU Office of Admissions and Records and request an application form. Applicants should prepare their part of the application and then return it to their school. The school then will send the completed application and transcript of the student's high school grades directly to the WVU Office of Admissions and Records.

Students should apply for admission when they have met these requirements—

*West Virginia Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above), the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.0 of a possible 4.0 (C or above), the student should apply as soon as possible after beginning the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the confidential report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the General Educational Development (GED) examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

*Out-of-State Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 3.0 of a possible 4.0 (B or above), the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above), the student should apply as soon as possible after the beginning of the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the confidential report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the GED examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

## Admission of Transfer Students

Applicants for transfer from another college or university should submit the following to the Office of Admissions and Records:

1. A complete application for undergraduate admission.

2. A certified transcript of all college work taken to date, including a statement of good standing. A certified statement covering subjects subsequently taken should be sent as soon as it is available.

3. Catalog pages describing all subjects which have or will have been completed. The applicant's name should be written on each page and each subject indicated by a check mark in the margin. Complete catalogs should not be sent. (*Not necessary from West Virginia colleges.*)

The cumulative average of all work attempted before transfer must be at least C.

Credits and grades earned for all baccalaureate-level courses at any baccalaureate degree-granting institution in the West Virginia state system of higher education and up to 72 hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West

Virginia state system shall be transferable toward a bachelor's degree. (See also "Requirements As to Residence," page 22.)

Credits (though not grades) are transferable from institutions outside the West Virginia state system for courses carrying a grade of C or higher. A grade of D on the first of sequence courses may be transferred if the second course grade is C or higher.

Credits from two-year community colleges and junior colleges outside the West Virginia state system are limited to 72 hours of lower-division courses. These colleges must be accredited by the North Central Association of Colleges and Schools or another regional accrediting association.

The transfer of credits does not exempt the student from satisfying all the requirements for the student's degree program at WVU.

All transcripts must be in the Office of Admissions and Records three weeks in advance of registration.

Evaluation of transcripts for transfer of credit is furnished only after receipt of complete official transcripts and application for admission.

Transfer students generally are admitted only after they complete one full year at another institution. Applicants who have less than one full year of college work elsewhere must submit both their college and high school records. Students who have successfully completed 6 hours or less at another accredited institution will apply as freshmen.

### **Intrauniversity Transfers**

Students transferring from Potomac State College of WVU shall be considered intrauniversity transfers. All records made at Potomac State College are part of the student's WVU record, but no more than 72 hours may be applied toward the baccalaureate degree.

If a change of major is involved, the transferee should consult the college, school, or department to which the student is transferring concerning requirements for the new major.

## **Admission of Special Students**

Persons not desiring to become candidates for a degree may, by special permission, be admitted as special students. Such students are subject in all respects to the usual rules relating to registration and scholarship. Admission to any class is subject to the approval of the instructor in charge.

Students who do not plan to follow a degree program at WVU should submit only a statement of good standing from the last college attended.

## **Admission of Post-Baccalaureate Students**

Students having one or more earned degrees from an approved college or university and desiring to enroll for undergraduate credit may be admitted as post-baccalaureate students. Students admitted in this category would not be working toward a graduate degree and credit earned while under this classification would be limited to undergraduate credit. Students admitted as post-baccalaureate, since they are limited to undergraduate credit, would be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an official transcript from the institution granting their latest degree.

## **Admission of Foreign Students**

Foreign students wishing to enroll at WVU must comply with the academic requirements for admission which have already been stated and with certain additional academic and nonacademic requirements, as follows.



## Early Inquiry and Application

Foreign applicants should forward a letter of inquiry one year before the intended time of beginning study in the United States. Foreign students who have been granted admission are expected on campus at the beginning of July for a six-week period of orientation and an intensive study of English. Accordingly, all the papers on which admission is based must have been received at the University at the very latest by April 1, to allow sufficient time for their processing and the communication of the decision to the student, as well as for the student to make arrangements for passport and visa clearance and other necessary details.

Foreign students should make all arrangements for their financial obligations to WVU and for their entire stay in the United States before leaving their countries.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## English Proficiency

No person should undertake graduate or undergraduate study at WVU who is not competent in the use of English. All foreign applicants the language of whose family and schooling was other than English must present a satisfactory score on the "Test of English As a Foreign Language" (TOEFL). (Applicants for graduate study must present a composite score of at least 500 on the TOEFL.)

Information on locations of TOEFL testing centers, dates of testing, and application forms is available from the Educational Testing Service, Princeton, NJ 08540 USA. Tests are normally given four times each year. It usually requires about one month to score and report individual test results. Registration for the TOEFL examination closes five weeks before the testing date.

## Credentials

Complete and original official records of all studies undertaken by an applicant at any institution attended (secondary school, college, university, technical school, professional school, etc.), must be provided at time of application for admission to WVU. Records may be copies, provided they are officially stamped. The records must show evidence of the study the applicant has done in the field of intended study at WVU.

Such records should include: (1) complete dates of attendance; (2) identification of individual subjects; (3) total number of hours in each class per week; (4) total number of weeks each class has in session; (5) final grade in each subject, for each year; (6) actual credits earned for each subject; (7) class, division, or rank achieved; (8) identification of the individual; (9) description and clarification of each institution's grading system; and (10) certification, and date, of degree or awards achieved, if not a part of the mark sheet or transcript. If any of this information cannot be supplied, an official explanatory statement from the school should be submitted. *(All documents must be in English.)*

All documents should be forwarded directly from the registrar or other authorized official of the school to the WVU Office of Admissions and Records.

If an applicant is currently enrolled in a school, tentative admission may be granted on the basis of an incomplete record which indicates the applicant will unquestionably meet the admission standards of WVU. Final admission, however, cannot be approved until the complete record has been received and evaluated.

## Foreign Students Transferring Within the United States

Foreign students applying to transfer from schools within the United States are advised that they will not be admitted and permitted to register at WVU unless they have complied well in advance with all requirements of the United States Immigration and Naturalization Service (INS).

The school the student was last authorized to attend must have completed and signed the INS form I-538. This, together with a valid I-20 form received from WVU, must have been submitted to the INS office having jurisdiction over the school the student was last authorized to attend. If the student is not now attending that school, a letter must be added explaining in detail why.

If the INS approves the transfer, this approval will be stamped on the student's I-94. The student must then immediately notify WVU that the transfer has been approved, either by sending an INS statement of transfer approval, or simply by reporting the fact that the approval appears on the I-94.

Only when these procedures have been completed will WVU undertake to admit and register the student. No student should move to Morgantown without having received this assurance of admission to WVU.

## Admission of Veterans

Veterans may be admitted to WVU with less than the minimum admission requirements necessary for other, nonveteran applicants.

Information regarding educational opportunities made possible at the University through provisions of the Veterans Readjustment Benefits Act of 1966—G.I. Bill (Public Law 358), the Vocational Rehabilitation Program of the Veterans Administration (Public Law 16), and the War Orphan's Educational Assistance Act of 1956 (Public Law 634) may be obtained from the Veterans Counselor by personal conference at his office in Mountainlair or by mail. An amendment to Public Law 634, enacted in 1964, provides benefits to many dependents of 100 percent disabled veterans.

Veterans having at least one continuous year of military service may be exempted from the physical education general program. No scholastic credit is given. Proof of military service should be presented to the Dean of Admissions and Records.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## Readmission

Undergraduate students who leave the University for at least one complete semester are required to submit an application for readmission to the Dean of Admissions and Records.

Students who have been suspended from the University must have written approval from the dean of the school or college from which the student was suspended.

Approval in writing must be secured in advance to elect courses offered elsewhere. A cumulative average of C is required in order to obtain such approval. Credit will be accepted for transfer for courses carrying a grade of C or higher when the conditions indicated above have been met.

## Health Science Programs At West Virginia University

<i>Major or Degree Program</i>	<i>Bachelor</i>	<i>Master</i>	<i>Doctorate</i>
<b>School of Dentistry</b>			
Dental Hygiene .....	B.S.		
Dentistry .....		M.S.	D.D.S.
Endodontics .....		M.S.	
Orthodontics .....		M.S.	
<b>School of Medicine</b>			
Anatomy .....		M.S.	Ph.D.
Biochemistry .....		M.S.	Ph.D.
Medical Technology .....	B.S.	M.S.	
Medicine .....			M.D.
Microbiology .....		M.S.	Ph.D.
Pharmacology and Toxicology .....		M.S.	Ph.D.
Physical Therapy .....	B.S.		
Physiology and Biophysics .....		M.S.	Ph.D.
<b>School of Nursing</b>			
Nursing .....	B.S.	M.S.N.	
<b>School of Pharmacy</b>			
Pharmaceutical Sciences .....		M.S.	Ph.D.
Pharmacy .....	B.S.Pharm.		
<b>University Hospital</b>			
Medical Graduate Residencies			
Radiologic Technology .....	Certificate		

Students wishing to change their major upon readmission must have permission from their previous dean and the dean of the college to which they wish to transfer.

## Fees and Expenses

All West Virginia University fees are subject to change without notice.

All fees are due and payable to the Comptroller on the days of registration. Medical Center students pay their fees at the Comptroller's Office, Basic Sciences Building. Students must pay fees before registration is accepted. Completion of arrangements with the Comptroller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair. Medical Center students pay at the Comptroller's Office, Basic Sciences Building.

All students are expected to register on days set apart for registration at the beginning of each semester or session of the University.

No student will be permitted to register at the University after the twelfth day of a semester or the fourth calendar day of a summer session. Days are counted from the first day of registration.



# ESTIMATED EXPENSES FOR MEDICAL CENTER PROGRAMS (First Semester) [Subject to Change]

Tuition and registration are the same for both semesters. Some expenses, such as fees, instruments, and book costs will be different for the Second Semester.

School or Division	Tuition and Registration Fees		Instruments	Lab Coats, Uniforms, etc.	Books	Total	
	Resident	Nonresident				Resident	Nonresident
<b>Dental Hygiene</b>							
Freshman	\$221.00	\$596.00		\$17.00	\$110.00	\$348.00	\$723.00
Sophomore	221.00	596.00	\$770.00	165.00	121.00	1,302.00	1,677.00
Junior	221.00	596.00	110.00	66.00	110.00	512.00	887.00
Senior	221.00	596.00	55.00	66.00	27.00	374.00	749.00
<b>Dentistry</b>							
First Year	283.00	701.00	3,970.00	60.00	450.00	4,801.00	5,219.00
Summer	234.00	701.00	1,500.00		50.00	1,793.00	2,260.00
Second Year	283.00	701.00	715.00	130.00	260.00	1,426.00	1,844.00
Summer	119.30	419.30	130.00			279.30	579.30
Third Year	283.00	701.00	14.00	115.00	190.00	602.00	1,020.00
Summer	9.30	9.30				19.30	19.30
Fourth Year	283.00	701.00	20.00	115.00		418.00	836.00
<b>Medical Technology</b>							
Junior	221.00	596.00	35.00	37.00	208.00	501.00	876.00
Summer	136.00	364.00		130.00	113.00	379.00	607.00
Senior	221.00	596.00				221.00	596.00
<b>Medicine</b>							
First Year	283.00	701.00	75.00	40.00	430.00	873.00	1,291.00
Second Year	283.00	701.00	390.00	40.00	320.00	1,088.00	1,506.00
Third Year	283.00	701.00		20.00	300.00	603.00	1,021.00
Fourth Year	283.00	701.00		20.00	205.00	508.00	926.00
<b>Nursing</b>							
Sophomore	132.00	596.00	5.00	116.00	120.00	462.00	837.00
Summer	474.00	474.00	5.00		50.00	187.00	529.00
Junior	221.00	596.00	5.00		50.00	226.00	601.00
Senior	221.00	596.00			80.00	306.00	681.00
<b>Pharmacy</b>							
Third Year	256.00	776.00	35.00	13.00	250.00	554.00	1,074.00
Fourth Year	256.00	776.00		13.00	250.00	519.00	1,039.00
Summer	256.00	776.00			256.00	776.00	776.00
Fifth Year	256.00	776.00		13.00	200.00	496.00	989.00
<b>Physical Therapy</b>							
Junior	221.00	596.00	15.00	40.00	180.00	496.00	836.00
Senior	221.00	596.00		40.00	160.00	461.00	801.00
Summer	48.00	219.00	10.00			58.00	229.00

\*Fees—includes lab fees, microscope rental, or graduation fee.

TUITION & REGISTRATION FEES BREAKDOWN				Higher Education Resources			Institutional Activity	Mountainair Construction	TOTAL
				Tuition	Registration				
Dent. Hy., Med. Tech., Nursing & Phys. Ther.	RESIDENT			\$ 55.00	\$ 50.00		\$ 96.00	\$ 20.00	\$221.00
	NONRESIDENT			230.00	250.00		96.00	20.00	586.00
Pharmacy & Graduate	RESIDENT			55.00	50.00	\$35.00	96.00	20.00	256.00
	NONRESIDENT			230.00	250.00	180.00	96.00	20.00	776.00
Dentistry & Medicine	RESIDENT			117.00	50.00		96.00	20.00	283.00
	NONRESIDENT			335.00	250.00		96.00	20.00	701.00
<b>TUITION PER SEMESTER HOUR—PART-TIME &amp; SUMMER (Under 9 hrs.)</b>									
				Resident		Nonresident			
Dent. Hy., Med. Tech., Nursing & Phys. Ther.				\$ 16.00	—Per Credit Hour—	\$ 73.00			plus Special Fees
Pharmacy & Graduate				\$ 22.00	—Per Credit Hour—	\$ 82.00			

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$10.00.

Students registering pay the fees shown in the fees chart, plus special fees and deposits as required.

No degree will be conferred upon any candidate before payment of all tuition, fees, and other indebtedness to any unit of the University.

Persons not registered as University students and who are not members of its administrative or teaching staffs shall not be admitted to regular attendance in University classes.

## Special Fees

Application for Admission (Law and Graduate School) .....	\$15.00
Diploma Replacement .....	5.00
Examination for Advanced Standing .....	3.00
Examination for Entrance Credit, per unit .....	1.00
Examination of Candidate for Graduate Degree .....	1.00
(For graduate students not otherwise enrolled at time of final examination.)	
General Educational Development Tests (high school level) .....	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduation .....	10.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Graduate Program Continuance Fee .....	35.00
Late Registration (nonrefundable) .....	10.00
(Not charged to students who complete registration during the regular registration days set forth in the University Calendar.)	
Reinstatement of Student Dropped from the Rolls .....	3.00
Student Identification Card Replacement .....	1.00
Student's Record Fee .....	2.00
(One transcript of a student's record is furnished by the Dean of Admissions and Records without charge. This fee is charged for furnishing an additional transcript.)	

## Summer Fees

Tuition, per semester hour	Resident	Nonresident
Undergraduate students .....	\$11.00	\$54.00
Professional and Graduate students .....	16.00	73.00
Dentistry and Medicine students .....	22.00	82.00
Daily Athenaeum Fee* .....	.90	.90
Health, Counseling and Program Services Fee .....	13.50	13.50
Mountainlair Construction Fee per 6-week summer session or any portion thereof* .....	7.50	7.50
Radio Station Fee* .....	.90	.90
Student Educational Services Fee .....	5.65	5.65
Transportation Fee .....	7.30	7.30

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)

## Classification of Students (Full-Time and Part-Time)

A *full-time professional or graduate student* is one who is registered for 9 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during the summer. A full-time student receives an identification card which entitles the student to admission to certain athletic events. A full-time student during the regular academic year and all students during the summer are entitled to free medical consultation and advice from the University physician. A moderate charge is made for room calls, X-rays, special laboratory tests, drugs furnished by the University Pharmacy, minor operations, treatment of fractures and dislocations, and intravenous treatment.

A *full-time undergraduate student* is one who is registered for 12 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during a 6-week summer session. A full-time student during the regular academic year receives an identification card which entitles the student to admission to certain athletic events. A full-time student during the regular academic year and all students during the summer are entitled to free medical consultation and advice from the University physician. A moderate charge is made for room calls, X-rays, special laboratory tests, drugs furnished by the University Pharmacy, minor operations, treatment of fractures and dislocations, and intravenous treatment.

For fee assessment purposes, a *part-time professional or graduate student* is one who is registered for fewer than 9 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

A *part-time undergraduate student* is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

## Fees for Off-Campus Courses

Fees for credit hours for off-campus students are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee or the Mountainlair Construction Fee.

## Laboratory Fees

Consult specific department sections of this *Catalog* concerning nonrefundable deposits and microscope rental fee.

## Service Charge on Returned Checks

A service charge of 5 percent of the amount of each check returned unpaid by the bank upon which it is drawn shall be collected unless the student can obtain an admission of error from the bank.

If the check returned by the bank was in payment of University and registration fees, the Comptroller's Office shall declare the fees unpaid and registration cancelled if the check has not been redeemed within three days from date of written notice. In such a case the student may be reinstated upon redemption of the check, payment of the 5 percent service charge, Reinstatement Fee of \$3.00, and Late Payment Fee of \$10.00.



## Refunding Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Comptroller evidence of eligibility for a refund.

To withdraw officially, a student must apply to the Dean of Admissions and Records for permission. Semester fees will be returned in accordance with the following schedule:

First refund period ending on the twelfth day following the beginning of general registration.	}	All activity fees chargeable to Special Services and all other semester fees less \$2.50. (Under no circumstances is the amount retained less than \$2.50.)
Second refund period ending on the fifth Friday following the beginning of general registration.		
Last refund period ending on the eighth Friday following the beginning of general registration.	}	40% of all refundable fees.

The second Friday following the beginning of general registration for a summer session is the end of the refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit, if the call comes before the end of the first three-fourths of the semester, and that the full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however, that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

## Identification Card

An identification card is issued to each full-time student upon paying full fees. It entitles the owner admission to certain University athletic events, various activities of student government, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

## Residential Status for Admission and Fee Purposes

The West Virginia Board of Regents has adopted regulations governing the classification of students as residents or nonresidents for admission and fee purposes at all institutions under its jurisdiction.

### General

Students enrolling in WVU shall be classified as resident or nonresident for admission, tuition, and fee purposes by the Dean of Admissions and Records. The decision shall be based upon information furnished by the student and all other

relevant information. The Dean of Admissions and Records is authorized to require such written documents, affidavits, verifications, or other evidence as are deemed necessary to establish the domicile of a student. The burden of establishing residency for tuition and fee purposes is upon the student.

If there is a question as to residence, the matter must be brought to the attention of the Dean of Admissions and Records and passed upon at least two weeks before registration and payment of tuition and fees. Any student found to have made a false or misleading statement concerning the student's residence shall be subject to disciplinary action and will be charged the nonresident fees for each session theretofore attended.

## **Residence Determined by Domicile**

Domicile within the state means adoption of the state as a fixed permanent home and involves personal presence within the state with no intent on the part of the person to return to another state or country. West Virginia domicile may be established upon the completion of at least twelve months of continued residence within the state before the date of registration, provided that such twelve months of residency is not primarily for the purpose of attendance at any institution of learning in West Virginia.

Establishment of West Virginia domicile with less than twelve months residence before the date of registration must be supported by proof of positive and unequivocal action, such as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established.

## **Minors**

Minors are defined by the West Virginia Code (2-2-10) as persons under 18 years of age. The residence of a minor shall follow that of the parents at all times, except in extremely rare cases where emancipation can be proved beyond question. The residence of the father, or the residence of the mother if the father is deceased, is the residence of the unmarried or unemancipated minor. If the father and the mother have separate places of residence, the minor takes the residence of the parent with whom the minor lives or to whom the minor has been assigned by court order. The parents of a minor will be considered residents of West Virginia if their domicile is within the state.

A minor student who is properly admitted to an institution as a resident student shall retain that classification as long as the student enrolls each successive semester.

## **Emancipated Minor**

An emancipated minor may be considered as an adult in determining residence, provided satisfactory evidence is presented that neither of the parents, if living, contribute to the minor's support nor claim the minor as a dependent for federal or state income tax purposes.

In the event that the fact of emancipation is established, the emancipated minor assumes all of the responsibilities of an adult to establish residence for tuition and fee purposes. Proof must be provided that emancipation was not achieved principally for the purpose of establishing residence for attendance at an institution of higher education.

### **Students 18 Years of Age or Over**

A student 18 years of age or over may be classified as a resident if: (1) the parents were domiciled in the state at the time the student reached majority and such student has not acquired a domicile in another state, or (2) while an adult the student has established a bona fide domicile in West Virginia. Bona fide domicile in West Virginia means that the student must not be in the state primarily to attend an educational institution and the student must be in the state for purposes other than to attempt to qualify for resident status.

Any nonresident student who reaches the age of 18 years while a student at any educational institution in West Virginia does not by virtue of such fact alone attain residence in this state for admission or tuition and fee payment purposes.

A student who is properly classified as a resident at the time of attaining the age of 18 shall continue to be classified as a resident as long as the student enrolls each successive semester and does not establish a domicile, or legal residence, in another state.

### **Change of Residence**

An adult student who has been classified as an out-of-state resident and who seeks resident status in West Virginia must assume the burden of proving conclusively that the student has established domicile in West Virginia with the intention of making the student's permanent home in this state. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements but also by a person's actions. The Dean of Admissions and Records in making his determination shall consider such actions as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established. Factors militating against a change in residence classification may include such considerations as the fact that the student is not self-supporting, that the student is carried as a dependent on the parents' federal or state income tax returns or the parents' health insurance policy, and that the student customarily does not remain in the state when school is not in session.

### **Marriage**

The residence of a married person is determined by the same rules of domicile which would apply if he or she were not married.

### **Military**

An individual who is on active military service or an employee of the federal government may be classified as a resident for the purpose of payment of tuition



and fees provided the individual established a domicile in West Virginia before entrance into federal service, that the individual entered the federal service from West Virginia, and that the individual has at no time while in federal service claimed, or established, a domicile in another state. Sworn statements attesting to these conditions may be required. The wife and dependent children of such individuals also shall be classified as residents of the state of West Virginia for tuition and fee purposes. Persons assigned to full-time active military service and residing in West Virginia may be classified as in-state residents for tuition and fees purposes after twelve months of continuous location in the state.

## Aliens

An alien in the United States on a resident visa, or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia, may be eligible for resident classification, provided the alien is in the state for purposes other than to attempt to qualify for residency status as a student.

## Appeal Process

The decisions of the Dean of Admissions and Records may be appealed to the President of WVU. The President may establish such committees and procedures as he determines necessary for the processing of appeals. The decision of the President may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board of Regents.

## Regulations Affecting Degrees

Candidates for degrees are eligible for graduation when they complete the requirements in the college or school in which they are registered which were in effect at the time of their first registration in that college or school, provided they graduate within a period of seven years from the time of their first registration. Students who do not complete the requirements for graduation within seven years from their first registration must meet *all the conditions* of a later *Catalog* — one that will be no more than seven years old by the time they graduate.

If there are major changes in the *Undergraduate Catalog* during the student's course of study, the student does not have to abide by them unless they are promulgated by the Board of Regents, or by local, state, or federal law. However, by choice and with the approval of the adviser and the Dean, a student may meet *all the conditions* of a later *Undergraduate Catalog* than that under which the student first registered in that college or school.

University policy provides that in view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of WVU the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

All degrees are conferred by the Board of Regents upon recommendation of the faculties of the various colleges and schools. A degree is granted at the close of the semester or summer session in which the student completes his/her work.

# Baccalaureate Degrees

## Credits Required

In addition to the University requirements listed in this *Catalog*, each baccalaureate degree is conditional upon the completion of a specified number of semester hours of credit, as determined by the student's degree program requirements. Therefore, students must familiarize themselves with their school and degree program requirements, as given in subsequent pages of this *Catalog*.

## University Core Curriculum

I. Two semesters of English Composition and Rhetoric (Engl. 1 and 2) are required of all candidates for the bachelor's degree in all colleges and schools of the University, unless part or all of the requirement for certain students of superior achievement is waived under regulations prevailing at the time of admission. Such students will be informed of their eligibility by the Coordinator of Writing Programs in English.

II. Remedial work in mathematics to cover the deficiency if the student, upon entering the University, lacks proficiency in mathematics equal to that normally attained in two years of high school mathematics.

III. Twelve credit hours\* of work in selected approved courses in each of the three following areas, including courses in at least two subjects in each group:

### *Group A*

1. Art
2. English  
(exclusive of Engl. 1 and 2)
3. Humanities
4. Languages
5. Music
6. Philosophy
7. Religious Studies
8. Selected Multidisciplinary  
Studies
9. Speech Communication
10. Theatre

### *Group B*

1. Economics
2. Forestry 140
3. Geography
4. History
5. Minerals 97
6. Political Science
7. Psychology
8. Selected Multidisciplinary  
Studies
9. Social Science
10. Sociology and Anthropology

### *Group C*

- |                     |   |
|---------------------|---|
| 1. Bacteriology     | 10. Nutrition                             |
| 2. Biology          | 11. Physical Science                      |
| 3. Chemistry        | 12. Physics and Astronomy                 |
| 4. Computer Science | 13. Physiology                            |
| 5. Entomology       | 14. Selected Multidisciplinary<br>Studies |
| 6. Engineering 111  | 15. Statistics                            |
| 7. Genetics         |   |
| 8. Geology          |   |
| 9. Mathematics      |   |

\*Two 4-credit courses and one 3-credit course may be substituted in lieu of 12 credit hours.

The determination as to whether ROTC courses will be counted toward fulfillment of the Core Curriculum or will be counted as free electives is the prerogative of the department chairperson or dean of the appropriate college or school. This is in keeping with the Board of Regents' orders, effective at the end of

the first semester of the 1967-68 academic year, which stipulated that "each academic division of the University must allow at least 8 hours of credit toward graduation for courses in Military Science (ROTC) or Air Force Aerospace Studies (ROTC), if earned during the first two years of enrollment ... A student electing to take Military Science (ROTC) or Air Force Aerospace Studies (ROTC) should consult the student's department chairperson or dean of the student's college or school for determination as to how the 8 hours of academic credit will be credited toward fulfilling graduation requirements."

## **Physical Education**

Two hours of physical education, to be taken during the first year in residence, are required for graduation, except in the case of students entering with advanced standing amounting to 58 semester hours or more. (See "General Program" in the School of Physical Education section of the *Undergraduate Catalog*.) The University Health Service will determine whether students are physically qualified for required physical education courses and for active participation in other University activities.

## **Branch, Community, and Junior Colleges**

Seventy-two hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges may not exceed 72 hours. Transfer credit from community colleges and junior colleges is normally limited to lower-division courses.

## **Requirements As to Residence**

A student who comes to WVU from another college or university should transfer not later than the beginning of the third year. In no case will a student who matriculates in WVU later than October 1 in any year be permitted to receive a degree at the next Commencement.

In special cases, students who desire to leave WVU at the close of their third year to enter another institution for the purpose of taking a combined course leading to two degrees or of preparing for graduate study, upon application beforehand to the Committee on Academic Standards of the college or school in which they are registered, may be permitted to do the work of the fourth year, or a part thereof, at such other institution and to receive the bachelor's degree from WVU upon presentation of the proper credits.

The transfer student whose undergraduate work has been altogether in institutions within the West Virginia state system of higher education must complete either the last 30 hours of work, or a minimum of 36 hours including 16 of the last 32 hours in residence. Other transfer students must complete either a total of at least 90 hours or the last 30 hours in residence at WVU. The transfer student may be required to earn up to 15 hours in the major field in residence regardless of the number of hours and the nature of the courses transferred.

## **Work Done Out of Residence**

It is WVU policy to discourage the taking of regular residence courses in absentia. In the case of courses begun at WVU and not completed because of illness



or for other acceptable reasons, however, permission to complete the work in absentia under the direction of regular WVU instructors may be granted by the Committee on Academic Standards of the college or school concerned; but in such case credit should be given only upon a report of a grade of no less than C on final examination. This regulation does not apply to WVU off-campus courses.

After a student enrolls on the Morgantown campus, the student must obtain advance approval in writing from the student's adviser and dean and the Dean of Admissions and Records to obtain credit toward a degree for courses offered at other institutions and undergraduate branches of WVU. An overall average of C is required on all work completed at WVU in order to obtain such approval. Transfer credit from schools not affiliated with WVU will be accepted for courses carrying a grade of C or higher when conditions indicated above have been met.

## **Substitution for Required Courses**

A student who desires to substitute another course for any prescribed in the student's curriculum or required for the degree toward which the student is working must obtain permission for such substitution from the Committee on Academic Standards in the student's college or school.

## **Advanced Placement Credit**

West Virginia University encourages students to work to their full capacity and to advance as rapidly as appropriate in their academic work. A number of opportunities are open to both qualified high school juniors and seniors, as well as to adults returning to school after an interval of work or military experience, to demonstrate competence beyond that normally associated with graduation from high school.

High school students who take college-level subjects offered in their schools in cooperation with the College Entrance Examination Board (CEEB) Advanced Placement Program should take the appropriate three-hour examinations administered by the Advanced Placement Service and have the scores sent to WVU. Credit for corresponding WVU courses will be given for high achievement on these tests.

Applicants for admission to the University, especially those who have gained a significant level of maturity through their life experiences, may gain college credit for their educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. Policy of the West Virginia Board of Regents allows University credit to be awarded for successful completion of any or all of the CLEP Subject Examinations, as well as allowing up to 34 hours of general education credit for successful performance on the CLEP General Examinations. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek advanced standing via the CLEP program. Interested applicants may write the Dean of Admissions and Records for further information regarding the CLEP program and WVU credit.

Advanced placement also may be granted for specific military experience. Returning veterans should consult the Dean of Admissions and Records and the WVU Veterans Counselor for details.

After admission to WVU, students may elect to take examinations demonstrating their competence in particular course work. Credit or advanced placement is given for satisfactory completion of the tests. Students interested in challenging courses by examination should consult their advisers for procedures and details.

## **Credit by Examination**

Students actively enrolled in WVU may receive credit for courses demonstrating competency in the content covered by a particular course. The department responsible for administering the course will determine the evaluation tools. Where skill and cognitive abilities are components of the course, both will be evaluated. Credit will be given if a satisfactory degree of competency is demonstrated.

A college, school, or department may require students desiring such credit to prepare a self-evaluation statement determining the degree of competency they possess and the methods by which it was achieved.

Students interested in receiving credit for a course by examination should consult the college or school in which the course is offered for procedures and details.

## **Credit for Correspondence Work**

Credit up to a maximum of 30 semester hours for work completed by correspondence in nonlaboratory courses will be accepted by WVU when such work is given by accredited colleges or universities that accept work for credit toward their own degrees and whose residence work is accepted by WVU.

## **Visitors**

Full-time University students may attend classes as visitors, provided they obtain the written permission of their advisers and of the instructors in classes they desire to visit. Members of the administrative or teaching staffs, or other regular employees of the University, may attend classes as visitors provided they obtain written permission of the chairperson of their departments and of the instructors in the classes which they desire to visit.

No credit is given for work in such classes. Such persons may not obtain credit by advanced standing examinations in courses attended as visitors.

## **Auditors**

Students may enroll in courses without working for grade or for credit by registering as auditors and by paying full fees. Change in status from audit to credit or from credit to audit may be made during the registration period. Attendance requirements for auditors shall be determined by the instructor of the course being audited. It is the prerogative of the instructor to strike the name of any auditor from grade report forms and to instruct the Office of Admissions and Records to withdraw the auditor from the class, if attendance requirements are not met.

## **Summer Sessions**

There are two summer sessions, each of six weeks duration. The first session begins approximately the middle of May and ends June 30. The second session begins July 1, and ends the second week of August. Requirements for admission and character of the work offered are the same for the summer sessions as for the regular academic year.

Credit may be obtained toward the bachelor's, master's, and doctorate. Offerings are varied from summer to summer so that students may complete work for the master's degree by attending summer sessions only.

For complete information, see the *WVU Summer Session Bulletin*.

## Grade-Point Average

All academic units of the University require minimum standards of scholastic quality. Grade points are computed only on grades earned at WVU and at other institutions in the West Virginia state system of higher education. To be eligible for graduation, a student must have a grade-point average of 2.0 (C) or higher on all work for which the student receives grades (except W, WU, and P). In addition, specific degree programs may require minimum grades of C, or in some cases higher than C, in specific courses or portions of the baccalaureate program.

It is the student's responsibility to keep informed of the student's grade-point standing. This information may be obtained at any time from the dean of the college or school in which the student is registered.

## Graduation with Honors

The University recognizes distinguished academic achievement by awarding initial baccalaureate degrees *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude*, to qualified students. The following regulations govern these awards:

1. Grade-point averages for graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be computed by starting with the student's penultimate semester or summer session and continuing in reverse chronological order until at least 80 semester hours, excluding credits earned with a grade of P or S, have been counted. If, in order to total the required number of hours it is necessary to include any part of a semester or summer session, the work of the whole semester or session shall be included.

2. Students who transfer to WVU may be eligible for graduation with honors based on the computational system stated above.

3. Subject to the above conditions, all candidates for a baccalaureate degree whose grade-point average is 3.80, or higher, shall be graduated *Summa Cum Laude*. Those whose average is lower than 3.8, but equal to or higher than 3.60, shall be graduated *Magna Cum Laude*. Those whose average is lower than 3.60, but equal to or higher than 3.40, shall be graduated *Cum Laude*.

4. Fitting recognition of graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be made on the candidate's diploma and in the Commencement Program.

(This policy will be effective for all students whose first enrollment in an institution of higher education is on or after May 15, 1979.)

## Examinations and Reports

### Courses

As a rule courses extend through one semester only, although some are of a year's duration. No credit will be given for less than an entire course except by special order of the Committee on Academic Standards. Grades given at the end of the first semester in courses extending throughout the year are merely indicative of the quality of work done by the student to that point and do not give credit for the part of the course so far completed. Such first-semester grades may be considered in determining the final grade, however.

Summer courses carry the same credit value as courses offered in regular semesters.



## Evaluation of Student Progress

Measurement and evaluation of learning, consistent with the objectives of the course, provide opportunity for the student and the teacher to evaluate progress through a variety of methods. Evaluation by final examination alone is discouraged.

Students are responsible for all material presented or assigned in scheduled instructional sections. Failure to complete all assigned work may result in a report of I or a grade of F at the discretion of the instructor.

Final examinations are held during the last two days of each summer semester of the academic year and during the last two days of each session. A listing in the *Schedule of Courses* each semester sets the time for final examinations.

The only tests permitted during the week of classes preceding finals will be in evening classes, practical laboratory tests, make-up examinations, and regularly scheduled short quizzes.

## Absence from Examinations

The student is required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor shall count the examination as zero and report the final grade as F. If, in the opinion of the instructor, absence of the student was for satisfactory reason, the grade of I may be reported.

A student who has been absent because of illness, authorized University activities, or other reasons approved by the student's dean, has the opportunity to make up regularly scheduled examinations.

## Grade Reports

In the seventh week of classes of each semester, instructors in all undergraduate courses shall submit a report of students doing unsatisfactory work; that is, earning grades of D or F. These grades are used for counseling and are not recorded on the student's permanent record in the Office of Admissions and Records. These reports are sent to the Dean of Admission and Records or a representative and this information is transmitted to the student, parent or guardian, adviser, and dean of the college or school.

Final grades are reported by instructors directly to the Office of Admissions and Records within 48 hours after the closing of the examination.

The final standing of all seniors provisionally approved for graduation at the close of the second semester shall be reported by their instructors to the deans of their colleges and schools, and the final standing of all graduate students provisionally approved for graduation shall be reported to the Dean of the Graduate School. Special report cards are supplied by the Dean of Admissions and Records.

A report of each student's work is made at the close of the semester or summer session to the student or to the student's parents or guardian.

# Grading, Absences, Academic Standing, Suspension, and Withdrawals

## Grading System

- A — excellent (given only to students of superior ability and attainment)
- B — good (given only to students who are well above average, but not in the highest group)
- C — fair (average students)
- D — poor but passing
- F — failure
- I — incomplete
- W — withdrawal before the end of the fifth week of a semester or withdrawal doing satisfactory work thereafter
- WU — withdrawal doing unsatisfactory work (after the fifth week of a semester)
- P — pass (see Pass-Fail Grading below)
- X — auditor, no grade and no credit
- CR — credit but no grade
- PR — progress. Final grade at end of the second semester (Medical Center)
- S — Satisfactory
- U — Unsatisfactory (equivalent to F) } in certain approved graduate courses

## Pass-Fail Grading

The basic purpose of pass-fail grading for undergraduates at WVU is to promote the undertaking of elective courses unrelated to the student's fields of degree concentration. A secondary purpose of pass-fail grading is to facilitate student grading in performance or competency based courses which may be an integral part of the student's program.

*Student Option.* Any full-time student who has completed 15 hours and maintains a 2.0 grade-point average may elect to take a maximum of 4 hours each semester or each summer session in which the grade earned will be either P (pass) or F (fail). The courses taken for pass-fail grading must be free electives and shall not exceed a total of 18 hours of credit. Unless otherwise indicated, excluded are courses in the student's major, courses in other subjects that are required by the major, and courses taken to satisfy either University, college, or school requirements. For example, courses elected to satisfy the physical education, English, Core, or foreign language requirements may not be taken for pass-fail grading.

The student electing the pass-fail grading option will be graded as a regular student and the appropriate letter grade submitted to the Office of Admissions and Records. The Office of Admissions and Records shall convert the earned letter grade to P-F on the basis of A, B, C, or D for a pass, and F for a fail.

The selection of a course for pass-fail grading must be made at registration and may not be changed after the close of the registration period.

*College or School Option.* A department or unit may designate any performance or competency based course which, with approval of the college or school and the University Senate, may be offered exclusively as P-F. Such courses offered only as P-F shall not be included in the maximum of 18 hours that may be freely elected under the student option.

(This revised policy became effective as of the beginning of the First Semester, 1977-78, for grading under the *Student Option*.)

## Grade Points

The grade-point average is computed on all work for which the student has registered, except for courses with grades of W, WU, P, and X, and is based on the following grade-point values:

A	B	C	D	F	I	U
4	3	2	1	0	0	0

Provided, however, that when a student receives a grade of I and later removes the incomplete grade, the average grade-point standing shall be calculated on the basis of the new grade.

If the final grade of a student in any course is F, the student must take the course again in residence at WVU if the student desires to receive credit for it, unless the dean of the college or school authorizes the exception. The grade of I is given when an instructor believes that the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within the following semester or the next semester in which the student is in residence, and becomes a failure unless special permission is granted by the appropriate Committee on Academic Standards to postpone removal.

For teacher certification the student is responsible for every registration in a course for which a grade of A, B, C, D, F, WU, P, or I is received.

## Absences

Students who are absent from class for any reason are responsible for work missed.

Students should understand that absences may jeopardize their grades or continuance in the course.

Instructors who use absence records in the determination of grades must announce this fact to students (in writing) within the first five class meetings.

It is the responsibility of the instructor to keep an accurate record of all students enrolled.

Instructors may report excessive absences to the student's dean or adviser.

Students who have been absent because of illness, authorized University activities, or other reasons approved by their deans, have the opportunity to make up regularly scheduled examinations.

## Uniform Academic Suspension Regulations

Any undergraduate student in a baccalaureate curriculum whose total grade-point average is less than 2.0 but whose total grade-point deficiency is not large enough to cause suspension, will be notified on the student's grade report from the Dean of Admissions and Records that the student's academic performance is unsatisfactory. Any further action or restriction is entirely the prerogative of the individual college or school.

Any undergraduate student in a baccalaureate curriculum with a grade-point deficiency which exceeds the maximum allowed by the uniform University regulation (see Table below) shall be subject to academic suspension by the dean of the college or school.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. A suspended student may not register for further work without prior approval of readmission by the Committee on Academic Standards and the dean of the college or school. Action on academic suspension is to be taken by the appropriate dean at the end of each semester and



## MAXIMUM ALLOWABLE GRADE-POINT DEFICIENCY\*

<i>Total Hours Attempted</i>	<i>Maximum Grade-Point Deficiency</i>	<i>Total Hours Attempted</i>	<i>Maximum Grade-Point Deficiency</i>
0-20	32	61-65	12
21-25	26	66-70	12
26-30	20	71-75	11
31-35	19	76-80	10
36-40	18	81-85	9
41-45	17	86-90	8
46-50	16	91-95	7
51-55	15	96 and above	6
56-60	14		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

such action is to be based on a special report from the Dean of Admissions and Records. The sequence of events in bringing about this action is:

1. The Dean of Admissions and Records will forward a special report at grade-reporting time to the college or school deans for appropriate action.

2. The Dean of Admissions and Records will provide the Vice President and Provost for Academic Affairs with a list of students subject to suspension in each college or school.

3. Deans will report to the Vice President and Provost for Academic Affairs the action taken on the students reported to them for academic suspension by the Dean of Admissions and Records.

4. A dean may suspend a student who fails to meet the requirements of academic probation set by the Committee on Academic Standards of the student's college or school.

Students who have been suspended may petition the Committee on Academic Standards of the college of enrollment after the next March 1st or October 1st to ascertain under what conditions, if any, they may be readmitted to that college.

A student suspended for academic reasons who fails to gain readmission to the college or school of the student's choice shall, upon application, be readmitted after one calendar year from the date of suspension, as a Remedial Study student in the College of Arts and Sciences. A Remedial Study student enrolls under special probationary rules that require a 2.0 grade-point average in each semester of enrollment. As a Remedial Study student, the student is not liable to suspension because of cumulative grade-point deficiencies. A student may, after successfully bringing the cumulative grade-point average up to 2.0, petition to have the work completed as a Remedial Study student apply toward the completion of degree requirements as may be appropriate.

Suspension by these procedures shall be termed academic suspension and the above regulations supersede all other regulations for academic suspension.

## Withdrawals

### Withdrawal from Class

Until Friday of the tenth week of classes (or, in the case of summer school, until two-thirds through the session), undergraduate students may withdraw from part

of their course work by obtaining their advisers' signatures on the University course withdrawal form and submitting the completed form to the Office of Admissions and Records. A deadline will be printed in the University Calendar each semester. No withdrawal will be permitted after the deadline.

Students are responsible for determining (with their advisers' help):

1. Whether their course load is reduced below the minimum requirements set by their college;
2. Whether their course load is reduced below the minimum number of hours required for financial aid or athletic eligibility;
3. Whether the course dropped is required to fulfill academic probation conditions;
4. Whether the course dropped is corequisite or prerequisite to another course the student is taking or a prerequisite to a course required by the student's curriculum the following term.

A student who withdraws before the established deadline shall receive a grade of W.

## **Withdrawal from University**

A student who desires to withdraw from WVU must obtain a withdrawal form from the Office of Admissions and Records (or dean's office of an off-campus instructional unit). Withdrawal procedure will be explained at that time. A student may withdraw from the University only before the last day of regular classes as established by the University Calendar.

A student who desires to leave WVU must officially withdraw in accordance with this policy. The student who fails to follow the established policy may incur severe penalties (e.g., a grade of F in each course for which the student is registered and/or suspension from the University).

It is the student's responsibility to see that all financial obligations are met and that all forms required for withdrawal from the University are properly executed and delivered to the appropriate authorities. The withdrawal becomes official only after the appropriate forms have been recorded by the Dean of Admissions and Records.

## **Re-Enrollment After Withdrawal**

An undergraduate student who withdraws from WVU in two consecutive semesters (excluding summer session) may not register for further work without approval of the dean of the college or school in which the student wishes to register and subject to conditions set by that dean.

## **Advisers, Committee on Academic Standards**

### **Advisers**

Each student entering WVU is assigned an adviser whose duty is to assist students in preparing schedules, assign them to classes, and certify their study lists to the Dean of Admissions and Records. The adviser is expected to give such advice and sympathetic guidance as the students may need in their work at the University. Students are expected to go freely to their advisers to discuss problems.

Advisers, upon receipt of reports of excessive numbers of absences, shall have conferences with the student concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, the case shall be reported to the dean of the college or school.

## Committee on Academic Standards

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

## Cheating

### Procedural Rules for Handling Cheating Cases

Cheating is condemned at all levels and in all areas of life. Like a crippling malady, it leaves its mark subjectively. Cheating indicates a weakness and inability to meet and face the issues and problems of life. It creates an atmosphere of mistrust, disrespect, and insecurity. The effects and influence of cheating will necessarily be reflected in commerce and government and in all of the professions and callings as well as in the classroom and in the home. Students at WVU should act to discourage and eliminate cheating of every kind and character for the moral and mental well-being of themselves and their fellow students. Likewise, the teaching faculty should remove and eliminate every situation which provides avenues and opportunities for cheating, thereby contributing to the inculcation of the principles of honesty, integrity, self-reliance, and self-respect in students. It is expected that University officials will have little occasion to place in operation the established procedures for handling cheating cases. Through these procedures and by means of a continued awareness, on the part of both faculty and students, of the intellectually and morally weakening effects of cheating, a healthy strengthening of the moral fiber of the University may be envisioned and accomplished.

Cheating may be defined as including:

1. Obtaining help from another student during examination.
2. Knowingly giving help to another student during examination.
3. The use of notes, books, or any other unauthorized sources of information during examination.
4. Obtaining, without authorization, an examination or any parts thereof before taking the examination.
5. Submitting a report, notebook, speech, outline, theme, or other problem for credit that has been knowingly obtained or copied in whole or in part from another individual's academic composition, compilation, or other product.
6. Submitting or participating in the submission of a report or examination paper falsely represented as being the result of the original efforts of the submitting student. [Plagiarism is a serious offense in whatever form it may appear, be it the submission of an entire article falsely represented as the student's own, the inclusion within a piece of the student's writing of an idea for which the student has not provided sufficient documentation or the inclusion of a documented idea not sufficiently assimilated into the student's language and style. A student who has any questions about whether a particular inclusion in the student's work might constitute plagiarism should take the responsibility of requesting the aid and clarification of the instructor to whom the student is submitting the work.]
7. Altering the record of any grade in any gradebook, office, or other record.



8. Any other type of misconduct, offense, or manifestation of dishonesty or unfairness in or relating to academic work.

The deans of the colleges and schools shall have the authority and shall be responsible for the handling of cheating cases arising or occurring within their respective colleges or schools. (Instructors of graduate students charged with cheating should follow the procedures outlined in the *Graduate School Catalog*.)

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and security officers, shall promptly report, via the department chairperson or immediate superior, if any, each known case of cheating, as hereinbefore defined, to the dean of the college or school concerned.

Each case of cheating shall be handled with dispatch, and the dean shall promptly report thereon in writing to the President of WVU and shall at the same time place a copy of such report in the permanent record of the student concerned and forward another copy thereof to the Dean of Student Educational Services for the student's permanent records. The report shall include a brief statement covering the facts and circumstances of the case and the discipline applied or recommended.

In cases wherein cheating occurs in a college or school other than that in which the student is registered, the minimum penalty, as prescribed in the paragraph below, shall be applied by the dean of the college or school in which the cheating occurred. In handling such cases the dean shall follow the procedure in the above paragraph and then immediately refer the case, by transmittal of a copy of the report thereon as prescribed in the above paragraph, to the dean of the college or school in which the student is registered. The purpose of this copy of the report is for information and for imposition or recommendation of such further discipline or penalty as may be warranted. Upon completion of a review of and action on the case, the dean of the college or school in which the student is registered shall thereupon compose an independent written report on the case and transmit same to the President of WVU and otherwise distribute copies thereof as provided in the above paragraph.

The deans and their respective teaching faculties shall take remedial and preventive steps to remove every opportunity for any situation conducive to cheating. Particular attention shall be given to the maintenance of a high level of proctoring in those colleges, schools, and departments wherein proctoring is employed and to security against student access to or knowledge of examination and test materials before the time of the intended use thereof for student examination and testing purposes. The deans shall exercise their independent discretion as to methods and means of accomplishing these ends and may employ therefor faculty meetings, written instructions, or other effective devices and measures.

The *minimum* penalty for all cases of cheating shall be dismissal from the course and the establishment of a grade of F in the course, as of the date of cheating, *unless in the opinion of the dean there are extenuating circumstances which might indicate the advisability of a lesser penalty*. Where the grade of F in the course involved is a part of the penalty for cheating, that grade is to be entered on the student's permanent record and to remain there even though the student withdraws from the course or from WVU.

For a second or subsequent cheating offense, in addition to failure in the course, suspension or expulsion of the student shall be recommended by the dean for the President's action. The Office of the Dean of Student Educational Services shall maintain its records of reports in cheating cases so as to detect and ascertain

promptly and accurately the occurrence of second or subsequent cheating offenses and, upon inquiry by the Dean, shall promptly advise whether the student has been guilty of any prior cheating offense or offenses.

Suspension or expulsion of a student guilty of cheating may, in first offense cases, be recommended by the Dean to the President if the facts and circumstances of the case so warrant or the rules, regulations, or policy of the college or school concerned so require.

In cheating cases involving criminal offenses, such as theft of examination or test materials, alteration of records, breaking or entering buildings, offices, desks, safes, or filing cabinets, damage to public property and other like or similar misconduct, the academic penalties and discipline as herein prescribed shall be applied and in addition thereto the dean of the college or school concerned shall, with the approval of the President of WVU, cause the facts of each case to be presented to the Prosecuting Attorney of Monongalia County, West Virginia, for further investigation and for prosecution by injunction or otherwise as may be warranted. Upon the issuance of a warrant for or the return of an indictment against a student on account of any such offense, the President shall suspend such student from WVU pending final prosecution thereon. If the student is acquitted of the offense, the student's suspension may be vacated, but if convicted of the offense, the student shall be expelled from WVU.

A student may appeal the decision or action of a dean in a cheating case to the President for review and reconsideration and the President may thereupon affirm or reverse, in whole, or in part, the decision or action of a dean.

In action on any cheating case, whether on appeal by a student or on recommendation or reference by a dean, the President may consider the case record, may further investigate or cause to be investigated the facts and circumstances of the case, and may act personally thereon and dispose thereof, or the President may, in his discretion, refer the case to another appropriate University office, committee, or agency for review investigation, consideration, and recommendation before final action thereon and disposition thereof.

It is recommended that, in all phases of cheating cases, care and caution be observed so as to avoid accusation or charge of cheating or related impropriety which may be without foundation. A false accusation may have serious implications and result in reflection on or harm to an innocent and unoffending student and discredit to the faculty.

# Medical Center Basic Sciences— Programs and Courses of Instruction

The Department of Anatomy, Biochemistry, Microbiology, Pharmacology and Toxicology, and Physiology and Biophysics offer individual graduate programs leading to the M.S. and Ph.D. degrees and provide courses for students of medicine, dentistry, pharmacy, nursing, and other allied health professions.

(Detailed information concerning Graduate School academic information is presented in Part 2 of the *WVU Graduate School Catalog*.)

## Anatomy

The Department of Anatomy offers graduate programs which are committed to the training of competent researchers and capable teachers. This is accomplished by the completion of a carefully designed plan of study tailored to the individual student's interests. The program begins with instruction in basic morphological, developmental, and functional aspects of human anatomy. Additional related course work and electives are required. These selected courses strengthen the area of interest of the student. The student then conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.).

## Admission Requirements

In addition to the admission procedure of the Graduate School, the Department of Anatomy requests that each applicant complete a departmental application form, obtained from the department. After an application is favorably reviewed by the departmental Graduate Committee, applicants are invited for a personal interview whenever practical. The applicant is admitted by a majority vote of the departmental faculty.

It is recommended that the following courses be completed before entering the graduate program: Algebra, trigonometry, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology, and two years of French, German, or Russian. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants who desire consideration for financial aid should complete the application process before January 15.

## Doctor of Philosophy

The first year of study is usually occupied with required course work within the Department of Anatomy. These courses include gross anatomy, microanatomy, neurobiology, introduction to research, and seminar in anatomy. Required courses in other basic medical sciences, such as biochemistry and physiology, are usually taken in the second year. Twelve hours of additional graduate-level courses are also required. These requirements will have been satisfied when the student earns a grade of at least B in each of the courses taken in the Department of Anatomy and has maintained a 2.75 overall grade-point average as required by the Graduate School.



To be admitted to candidacy for the Ph.D. degree the student must satisfy the above requirements, demonstrate a reading knowledge of one foreign language, pass a written and oral comprehensive preliminary examination, and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree each student must complete a dissertation based on original research and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an Advisory Committee, which is composed of faculty members selected by the student.

The student often culminates the training period with presentations at regional and/or national scientific meetings. The Southern Society of Anatomists and the American Association of Anatomists are the most suitable meetings for this purpose.

## Master of Science

The master's program in Anatomy is offered as a terminal degree only for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D.

An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy plus 6 to 9 hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work the student must complete a thesis based on original research and defend the thesis at an oral examination.

## Research and Instruction

*Research Areas*—Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues, and organs, under normal and experimental conditions with *in vivo* microscopic, histochemical, electron microscopic, autoradiographic, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration and the effects of drugs and other environmental agents on development. Neuroanatomy: Experimental, comparative, and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

## Anatomy (Anat.)

101. *Principles of Human Anatomy*. (For paramedical students only.) I. 3-4 hr. PR: Consent of instructor or chairman. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.
102. *Gross Anatomy*. (For physical therapy students.) II. 3 hr. PR: Anat. 101 and/or consent of instructor or chairman. Functional gross anatomy of the back, extremities, head, and neck.
103. *Microanatomy*. (For physical therapy students.) I. 2 hr. PR: Consent of instructor or chairman. Introductory cell and tissue structure.
109. *Oral Histology*. (For dental hygiene students.) II. 3 hr. PR: Consent of instructor or chairman. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.

152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent of instructor or chairman. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture. (Same as *Sociology and Anthropology 152*.)
301. *Gross Anatomy of the Trunk*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairman. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum.
302. *Gross Anatomy of the Head and Neck*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) II. 3 hr. PR: Medical student standing or consent of chairman. Gross anatomical study of the head and neck.
304. *Gross Anatomy of the Extremities*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 2 hr. PR: Medical student standing or consent of chairman. Gross anatomical study of the upper and lower extremities.
305. *Microanatomy*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairman. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 4 hr. PR: Dental student standing or consent of instructor or chairman. Gross anatomical study of the back, upper extremities, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Dental student standing or consent of instructor or chairman. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy*. (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairman. Gross and microscopic structure of the central nervous system. (See also CC MD 375, Neurobiology.)
309. *Microanatomy and Organology*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 4 hr. PR: Dental student standing or consent of chairman. Cells, tissues, and organs.
312. *Special Topics in Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301 or 306; and Anat. 305 or 309; consent of chairman. Different topics of current interest in anatomy that are not included in the regular graduate courses.
314. *Applied Anatomy*. II. 2-6 hr. per sem. PR: Consent of instructor or chairman. Detailed study of anatomy adapted to the needs of the individual student.
318. *Oral Histology and Embryology*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 2 hr. PR: Dental student standing or consent of instructor or chairman. Structure, function, and development of oral tissues and organs.
401. *Advanced Gross Anatomy*. I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 306, 307 and consent of instructor or chairman. Morphological and functional analysis of a selected region, with dissection.
402. *Advanced Developmental Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301, 302, 304, and consent of instructor or chairman. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar*. I, II. 1-6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.
405. *Experimental Embryology*. II. 3 hr. PR: Embryology and cellular physiology or biochemistry and consent of instructor or chairman. Development, differentiation, and regeneration. (Alternate Years.) (Course not offered in 1979-80.)

406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. (Course may be repeated.) PR: CC MD 375 and consent of instructor or chairman. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. 3 hr. PR: Anat. 305 or 309, biochemistry, and consent of instructor or chairman. Histochemical theory and techniques. (Alternate Years.) (*Course will not be offered in 1979-80.*)
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent of instructor or chairman. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
491. *Advanced Anatomy*. I, II. 2-8 hr. PR: Consent of chairman.
497. *Research*. I, II, S. 1-15 hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Committee.)

## Biochemistry

The intent of this program is to prepare doctoral candidates to contribute in a significant fashion to the field of biochemistry; the program consists of a vigorous curriculum in the classroom and laboratory. During the first nine months the student achieves familiarity with the content of biochemistry by taking a comprehensive introductory course and two or more specialized courses in biochemistry. He or she will also take a major course outside the department, e.g., advanced organic chemistry or physical chemistry. During this period the student will obtain an extensive introduction to the methodology of biochemistry by spending periods of four weeks each in the laboratories of four or five faculty members; during each period the student will carry out a project which is related to the research going on in that laboratory.

At the end of the first 9-12 months the student develops, with faculty advice, a doctoral thesis project which is pursued for the next 2½ to 3 years; course work is still undertaken but emphasis is shifted to research. Finally, the student prepares and presents the results of the work in the form of a dissertation. A period of four years is usually required to complete this curriculum.

A curriculum leading to an M.S. degree is also possible by special arrangement.

## Admission Requirements

The entering graduate student should hold a bachelor's degree with a science major and should have successfully completed the following courses: physics, organic chemistry, calculus, physical chemistry, qualitative analysis, and quantitative analysis. A deficiency in certain of the courses may, in some cases, be made up after admission to the program.

Application is made by having the following items sent to the Department of Biochemistry: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's potential; (c) a transcript of the applicant's college grades; and (d) the official Graduate Record Examination (GRE) scores. Usually students are admitted only once a year, in mid-August. The deadline for receipt of the department of the applications and supporting documents is June 1; to be considered for financial support, applications should be submitted much earlier, preferably by February 1. For more details write: Graduate Coordinator, Department of Biochemistry, West Virginia University Medical Center, Morgantown, WV 26506.



## Research and Instruction

*Research Areas*—Hormonal regulation of hepatic carbohydrate metabolism. Enzyme kinetics. Lipid metabolism and biogenesis of membranes. Structure and function of transfer RNA; RNA synthesis in mammalian cells. Atherosclerosis. Physical chemistry of proteins. tRNA methyltransferases in normal and tumor systems. Influence of nutrition on tissue protein and amino acid metabolism. Chemistry of host-parasite relationship. Interaction of macromolecules in biological systems. Physical biochemistry. Nutritional oncology. Immunochemistry. Mechanism of enzyme action. Role of hormones on secretory mechanisms.

## Biochemistry (Bioch.)

139. *Introduction to Biochemistry*. I. 4-5 hr. PR: Inorganic chemistry. (For pharmacy and medical technology students; others by consent.) Lecture and conference, 4 hr.; Laboratory, 1 hr.
192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a minimum of 12 hr.) PR: Consent.
231. *General Biochemistry*. I. 7 hr. PR: Inorganic chemistry, organic chemistry. (For medical students and limited number of regular full-time graduate students in basic sciences departments with consent of the Chairman of Biochemistry.) Lecture, conference, and demonstration.
239. *Clinical Chemical Techniques*. II. 4 hr. PR: Bioch. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)
305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, organic chemistry, and consent. (Dental and graduate students.) Lecture, conference, and demonstration.
423. *Immunochemistry*. II. 2 hr. PR: Consent. Chemistry and biochemistry of antibodies, antigens, and complement.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Designed primarily to provide a background for students who will do research in biochemistry and molecular biology. Emphasis will be on basic principles and concepts useful for the solution of important biological problems.
496. *Graduate Seminar*. I, II. 1 hr. PR: Bioch. 231 or equiv.; consent. Presentation and discussion of special topics.
497. *Research*. I, II, S. 1-15 hr.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

## Conjoined Basic Sciences Courses (CC MD)

320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. For Graduate students, upperclassmen in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
322. *Epidemiology and Biostatistics*. (First Year.) II. 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.
350. *Radiation Safety and Isotope Usage*. II. 1-2 hr. PR: Phys. 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; ERDA (formerly AEC) and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.

370. *Medical Genetics*. (For medical and limited number of graduate students.) II. 1 hr. PR: Consent. Genetics and heritable diseases in man.
375. *Neurobiology*. (For medical and limited number of graduate students.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of first three years of medical curriculum. (Graded as S or U.) The selective program for fourth-year medical students offers a wide range of opportunities in the basic sciences, medical specialties and subspecialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at WVU Medical Center; in Morgantown and approved programs at the Charleston Division, WVU Medical Center; Wheeling Division. School of Medicine; and Veterans Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans the individual program, with faculty advice. Flexibility is permitted. With consent of the instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks notice before changing an in ramural or extramural selection. (See intramural and extramural folders, published annually, that describe the selective opportunities.)

## Microbiology

The Department of Microbiology offers programs of study leading to the degrees of Master of Science and Doctor of Philosophy in Medical Microbiology. Students are given extensive training in microbiological research methodology. The program aims towards training students capable of designing and carrying out their own research programs and teaching microbiology.

### Admission Requirements

Applicants should have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics—including calculus—in order to be considered for admission. Applicants must submit to the Department of Microbiology a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores—both aptitude and advanced. In addition, transcripts and an official application for admission to the Graduate School must be sent directly to the WVU Office of Admissions and Records. Applicants for admission to a degree program should have a grade-point average of 3.0, or better, and a score of 600, or above, on each of the GRE examinations. Early application is encouraged. Applicants desiring financial aid should complete their application before January 1.

### Program Requirements

Every student must take a two-semester sequence in basic microbiology (M. Bio. 310 and 311) and two semesters in biochemistry. Seminar is a required course for all students each semester that they are in residence. All students in the Department of Microbiology are also required to participate in teaching at least one semester a year. The remaining courses are selected by the student and the advisory committee from courses in Microbiology numbered M. Bio. 317 or higher, and from outside the department.

The Department of Microbiology also has informal noon-hour journal clubs scheduled four days a week, one each in cell biology, immunology, virology, and bacteriology and parasitology.

The Master of Science program requires 30 hours of course work, of which at least 20 hours must be in microbiology. Six hours must be in research. A research thesis and a final oral examination are required. A grade-point average of at least 3.0 must be achieved. In general, two years are needed to complete the M.S. program.

The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation, and passing of qualifying and final oral examinations. Appropriate course work with a grade-point average of 3.0 is also required. Where appropriate, course work in related subjects such as calculus, physical chemistry, and statistics will be required. Three years are usually needed to complete the Ph.D. program.

For additional information, write to the Chairman, Department of Microbiology, WVU Medical Center, Morgantown, WV 26506.

## Research and Instruction

*Research Areas*—Pathogenic Bacteriology: mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: nutrition and metabolism of a variety of pathogenic microorganisms. Genetics: basic studies on the mechanisms of genetics including transfer of genetic information. Virology: basic studies on viral-tumor relationships; virus-induced antigens in transformed cells; pathogenesis of lymphocytic choriomeningitis virus. Parasitology: host-parasite relationships between helminth parasites and insects and vertebrate hosts. Electron Microscopy: cytological studies of the fine structure of microorganisms and the influence of environment on these structures. Immunology: studies on the mechanisms of antigen-antibody reactions and the development of hypersensitivity; immunopathology of pulmonary disease. Other programs: Detection of environmental pollutants; effect of environmental agents on host resistance.

## Microbiology (M. Bio.)

- 26. *Microbiology*. I. 4 hr. (For students in the paramedical sciences.)
- 220. *Microbiology*. II. 4 hr. (For pharmacy students.) PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
- 223. *Microbiology*. II. 5 hr. (For medical technology students; graduate students with consent.) PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
- 224. *Parasitology*. II. 4 hr. (For medical technology students.) Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
- 301. *Microbiology*. I. 5-7 hr. (For medical students only.) PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms. Emphasis on use of microbiology in solving clinical problems.
- 302. *Microbiology*. I. 5 hr. (For dental students only.) PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
- 310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR or Conc: Biochemistry; consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. Life cycles of a few model systems. (Students may enroll for one to three portions of the course.)



311. *Principles of Infection and Resistance*. II. 1-5 hr. PR or Conc.: Biochemistry; consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students may enroll for one to five portions of the course.)
317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available.
327. *Parasitology*. II. 4 hr. (For graduate students.) PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*.

*Pathogenic Virology*. I. 3 hr. PR: M. Bio. 310 and 311 or equiv., consent. Pathogenesis of medically important viruses and mechanisms for their control. (*Course will not be offered in 1979-80.*)

*Pathogenic Bacteriology*. II. 3 hr. PR: M. Bio. 311, consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease. (*Course will not be offered in 1979-80.*)

*Clinical Laboratory Bacteriology*. I, II. 2-4 hr. PR: M. Bio. 311 or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. Laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)

*Microbial Genetics*. I. 4 hr. PR: M. Bio. 310 or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.

*Bacterial Physiology*. II. 2 hr. PR: M. Bio. 310, biochemistry, consent. The physiology and metabolism of bacteria of medical, industrial, and ecological importance.

*Immunobiology*. II. (Alternate Years.) PR: M. Bio. 311, consent. 2 hr. Discussion of the biological and cellular aspects of immunology. Immunobiology, immunopathology, and cellular immunology receive strong emphasis. (This course is designed to complement Bioch. 491.)

*Medical Mycology*. I. 4 hr. PR: M. Bio. 311 or equiv. Advanced study of the fungi of medical importance, including the pathobiology of mycoses and toxicoses.

*Comparative Cytology*. II. 4 hr. PR: Consent. Limited enrollment. Basic features in structure and function of animal, plant, and microbial cells and their organelles. Projects in electron microscopy.

*Cell and Molecular Biology of Eukaryotes*. II. 1-6 hr. PR: Consent. Interdepartmental team taught course. Modular approach: (1) overview and cell growth; (2) somatic cell genetics and chromosome structure; and (3) hormone action and gene expression.

*Tumor Virology*. II. 3 hr. PR: Biol. 315 or equiv., consent. A consideration of the molecular and biochemical aspects of viruses which cause tumors and the mechanisms by which they cause cellular transformation. (*Course will not be offered in 1979-80.*)

*Clinical Laboratory Virology*. S. 3 hr. per 6-week session. PR: Consent. Lectures and laboratories on isolation of viruses from clinical specimens. Includes serological methods.
496. *Seminar*. I, II, 1 hr. PR: M. Bio. 310 or equiv. (Graded as S or U.)
497. *Research*. I, II, S. 1-15 hr. PR: M. Bio. 310 or equiv. Students may enroll more than once. (Graded as S or U.)

## Pathology

*Research Areas*—Atherosclerosis; thrombosis; platelet aggregation and function; lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electron microscopy) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; biomedical application of laboratory medicine; applied laboratory studies in microbiology.

### Pathology (Path.)

- 128. *Introduction to General Pathology*. I. 2 hr. PR: Enrollment in dental hygiene or physical therapy. A study of the basic pathologic processes in man.
- 129. *Oral Pathology*. II. 3 hr. PR: Path. 128, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.
- 328. *General Pathology*. (For dental students and certain graduate students with consent of chairperson.) I. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.
- 350. *Hematology*. 3 hr. PR: Consent.
- 351. *Pathology and Laboratory Medicine*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) I, II. 15 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systemic approach to disease states.
- 353. *Oral Pathology II*. I. 2 hr. PR: Path. 338, consent. Continuation of Path. 338.
- 355. *Clinico-Pathologic Correlation Conference*. (For dental students, third year.) II. 1 hr. PR: Consent; Path. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
- 356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 and 354, and consent. Microscopic and gross specimens from selected autopsies.
- 382. *Advanced Oral Histopathology*. I, II. 1-2 hr. PR: Path. 338, 353, and consent. Microscopic study of head and neck lesions.
- 401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar of independent study of local and/or systemic disease processes affecting oral and facial structures.
- 497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology and Toxicology

Pharmacology and Toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the degrees of Master of Science and Doctor of Philosophy, with research concentrations in such areas as automatic pharmacology, biochemical pharmacology, neuropharmacology, psychopharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, pharmacogenetics, malarial chemotherapy, and toxicology.

## Admission Requirements

Regular applicants for the graduate program in pharmacology and toxicology should present as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; five semesters of chemistry including two semesters of organic chemistry and one semester of physical chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination—including the advanced test in either chemistry or biology—are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write: Director of Graduate Studies, Department of Pharmacology and Toxicology, WVU Medical Center, Morgantown, WV 26506.

## Master of Science

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is recommended as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project. The course work requirements for the M.S. in pharmacology and toxicology usually consist of Physiology 344 and 345, Biochemistry 231, Statistics 311, Pharmacology 361, 363, 364, 461, 462, and 497. Some students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research to date before taking either the written or the oral Ph.D. qualifying examinations.

## Doctor of Philosophy

Before official admission to candidacy for the doctorate, the student must satisfactorily complete both a written examination and an oral comprehensive qualifying examination. The written examination is generally taken during the sixth semester in the program (not counting summers) on or about March 1. The student will generally have some choice as to questions which must be answered. Two days (6 hours a day) are generally required to complete the written examination. When a student has successfully passed the written examination, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department—is appointed and constitutes the oral examining body. The oral portion of the qualifying examination is held not less than two nor more than six weeks after the successful completion of the written examination.

## Dissertation

Upon admission to candidacy for the Doctor of Philosophy degree, the candidate must select a topic for the dissertation which makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.



## Research and Instruction

*Research Areas* — Autonomic pharmacology; autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage release and metabolism of transmitters and adrenal medullary hormones. Chemotherapy: Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: Biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system. Toxicology: Metabolism of toxic agents, pulmonary toxicology, environmental toxicology, perinatal pharmacology and toxicology. Electron microscopy: Effects of drugs on the ultrastructure of cells.

## Pharmacology and Toxicology (Pcol.)

160. *Pharmacology*. II. 3 hr. (For undergraduate students in the paramedical sciences.). Interactions of clinically useful therapeutic agents with the mammalian system.
242. *Pharmacodynamics and Therapeutics II*. I. 6 hr. (For pharmacy and graduate students.) PR: Phar. 240 or consent. Continuation of Phar. 240.
360. *Pharmacology*. I. 4 hr. (For dental and graduate students.) PR: Dental student standing or consent. Lecture and demonstrations on pharmacologic actions and therapeutic uses of drugs.
361. *Pharmacology*. II. 6 hr. PR: Consent of department chairman. (For medical students and a limited number of regular, full-time graduate students in medical basic sciences departments.) Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
363. *Toxicology*. II. 3 hr. PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on biochemical and molecular mechanisms of chemical toxicity.
364. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology including physiochemical properties, absorption, distribution and metabolism of drugs, drug receptor theory, and molecular mechanisms of toxicity. *Offered every third year. (Course will not be offered in 1979-80.)*
365. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of specialized areas of pharmacology including biochemical, endocrine, pulmonary, and cardiovascular pharmacology. *Offered every third year.*
366. *Advanced Pharmacology (Laboratory in Drug Evaluation)*. S. 1-3 hr. PR: Consent. Laboratory procedures and demonstrations in assessing drug action.
367. *Advanced Neuropharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures on the actions of drugs on the central and peripheral nervous system. *Offered every third year.*
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pcol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.
490. *Teaching Practicum*. I, II. 1-2 hr. per sem. PR: Pcol. 361 and consent. Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology. For advanced graduate students.

491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology and Biophysics

The objective of the Department of Physiology and Biophysics graduate program is to educate physiologists in the methods of conducting independent research of high quality and of effective teaching. The department's graduates are conversant with all aspects of physiology and are prepared to interact creatively with scientists in related fields. To this end the program leading to the degree of Doctor of Philosophy emphasizes close interaction of faculty with students and a high faculty/student ratio. The Master of Science program includes 24 hours of course work and a research project leading to the thesis.

### Admission Requirements

Individuals from a wide variety of backgrounds study Physiology and Biophysics as one of the basic medical sciences. It is, in fact, not uncommon to find physiologists with such diverse backgrounds as biology, chemistry, physics, psychology, engineering, and mathematics. The department encourages the participation of qualified individuals from many undergraduate and graduate disciplines. There are, however, certain prerequisite courses a student must take either before enrollment or during the first year of the program. These prerequisites, designed to give a student the proper foundation for advanced study in Physiology and Biophysics, are: Biology (2 semesters), Physics (2 semesters, 3 desirable), and Organic Chemistry (1 semester). Physical Chemistry is not required, but is desirable.

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, a completed departmental application form, and Graduate Record Examination scores (aptitude and one advanced test). A bachelor's degree or equivalent is required for admission; and an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs may be obtained by writing to the Graduate Adviser, Department of Physiology and Biophysics, West Virginia University School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as June of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

### Doctor of Philosophy

The first year in the program normally includes the following courses: Medical Physiology (7 hours), Biochemistry (4 hours), Statistics (3 hours), Neurophysiology (3 hours) or Neurobiology (6 hours), Graduate Colloquium (2 hours), Physiological Methods (variable credit), electives, and prerequisites (a limited number of which may be made up during the first year). The first-year curriculum familiarizes the student with some of the same basic sciences material presented to the medical students. Medical physiology, biochemistry, and neurophysiology/neurobiology are part of the medical curriculum. The courses are team-taught by scientists specializing in each of the areas covered. In addition,

the student is introduced to the full range of activities in the department through the Graduate Colloquium. Physiological Methods provides a foundation in the research strategies, techniques, and tools used by physiologists and biophysicists.

During the first summer, students may begin research projects in departmental research laboratories of their choice. They also may take elective courses or make up prerequisites.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses normally include: Advanced Physiology (12 hours), Graduate Colloquium (2 hours), Seminar (2 hours), and Teaching Practicum (assisting in laboratory demonstrations, conducting small-group conference sessions, giving lectures). Commonly chosen electives include pharmacology and toxicology, and advanced or specialized topics in biochemistry and biophysics. The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. Students begin to present discussions of research topics in the Graduate Colloquium and Seminar.

After completion of the second academic year, the student takes a qualifying examination consisting of three written research design papers followed by an oral examination dealing with these papers and with the course work of the preceding two years. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy in Physiology and Biophysics.

During the third and fourth years the student may enroll in elective courses. Yearly participation in the Teaching Practicum provides experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research, with presentations about the research in the Graduate Colloquium. During these years the students will attend and present papers at national meetings of scientific societies (American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences.) The Ph.D. program is generally completed in four years.

## Master of Science

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first academic year and first summer are likewise identical for the master's and doctoral students. During the second year of the master's program, the student enrolls for 6 hours of Advanced Physiology, Graduate Colloquium, and sufficient electives to fulfill the required 24 hours of course work. In addition, 6 hours of research are directed toward completion of the thesis. The M.S. program is typically completed in two years.

## Research and Instruction

*Research Areas*—Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, neural, renal, and respiratory physiology.

## Physiology (Physi.)

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lect., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms



- involved. Pathophysiology and clinical correlations are introduced in relations to normal physiology.
248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lect., 2 lab.
  341. *Physiological Methods I*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology and biophysics. (Designed to be taken in conjunction with Physi. 345.)
  342. *Physiological Methods II*. I. 1-4 hr. PR: Consent. Research techniques and strategies for physiology and biophysics. (Designed to be taken in conjunction with Physi. 344.)
  343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairman. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lect., 1 conf., 1 lab.
  344. *Medical Physiology*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 3 hr. PR: College physics, algebra, chemistry, and consent of department chairman. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 1 lect., 1 conf.-lab.
  345. *Medical Physiology II*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 4 hr. PR: Physi. 344 and consent of department chairman. Continuation of Physi. 344. 3 lect., 1 conf.-lab.
  346. *Neurophysiology*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 3 hr. PR: College algebra, physics, and consent of department chairman. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 2 lect., 1 conf.
  347. *Biophysical Analysis*. II. 4 hr. PR: Math. 17 and Physi. 345 or consent. Systems biophysics, method of analysis, and their application in the quantitative study of biological phenomena. 3 lect., 1 conf.-seminar. (*Alternate Years; not offered in 1979-80.*)
  399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
  441. *Physiological Methods I*. II. 1-5 hr. PR: Variable for four modules: None for modules 1 and 2; calculus and physiology, or consent, for modules 3 and 4. Research techniques and strategies for physiology and biophysics, presented in four modules: animal surgery, computer methods, physiological instrumentation, and compartmental analysis. Enrollment in various combinations of modules for variable credit possible.
  442. *Physiological Methods II*. I. 1-4 hr. PR: Variable for four modules: Calculus and physiology, or consent for modules 1, 2; module 3 of Physi. 441 or consent, for modules 3 and 4. Advanced research techniques and strategies in physiology and biophysics, in four modules: Subcellular physiological methods, principles of modeling, electrophysiology, and monitoring physiological parameters.
  444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate status and consent. (Graded as S or U.)
  447. *Systems Biophysics*. II. 4 hr. PR: Physi. 347 or consent. Quantitative analysis of physiological regulatory systems. 2 lect., 2 conf.-seminar. (*Alternate Years; not offered in 1979-80.*)
  490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
  491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology and biophysics, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lect., 3 conf.

497. *Research in Physiology and Biophysics*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1-6 hr. PR: Consent. (Graded as S or U.)

# School of Dentistry

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Dental auxiliary careers such as dental hygiene may be pursued. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

The School of Dentistry of West Virginia University offers programs of education leading to the degrees of Doctor of Dental Surgery, Master of Science with majors in Endodontics and Orthodontics, and Bachelor of Science in Dental Hygiene. One oral surgery internship and two oral surgery residencies are offered by the Department of Oral Surgery. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Four general practice residencies are offered by the School of Dentistry and University Hospital. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by an associate dean, two assistant deans, and the clinical and medical center basic sciences chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of the University.

## Doctor of Dental Surgery Program

The School of Dentistry offers a program of education leading to the degree of Doctor of Dental Surgery (D.D.S.). The requirements for admission and the curriculum conform to the standards established by the American Dental Association Commission on Accreditation of Dental and Dental Auxiliary Educational Programs.

## Admission

*Application for admission in the Fall of 1980 should be made promptly upon completion of the 1978-79 school year, even if the applicant has not completed all the requirements as listed.*

*The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry in the Fall of 1980, is November 1, 1979. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet and thus should be reviewed carefully by the*



*applicant. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.*

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.*

Each applicant is required to satisfactorily complete the Dental Admission Test. It is suggested that the test be taken in April, before making application in June, for admission in the fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisite courses should include:

	<i>Sem. Hr.</i>
English Composition and Rhetoric, or equivalent .....	6
Zoology or Biology (with laboratory).....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

All applications are reviewed and those most qualified are required to appear for a personal interview. The Committee on Admissions will advise the applicants of the time and place of the interview.

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements as stated above, appropriate completion of all application instructions, submission of all transcripts from each college attended, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding admission enrollment).

*Final acceptance of a student is contingent upon satisfactory completion of all requirements.*

## Promotion

At the close of the school year, the status of each student is reviewed by the appropriate Committee on Academic Standards, which then reports to the Dean and Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat a year, or be suspended from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the Dean and Faculty Council.

Unconditional promotion normally depends upon the fulfillment of all course requirements, and the attainment of certain minimum standards of academic achievement. These requirements provide for: a minimum grade-point average of 1.5 for promotion to the second year; a minimum cumulative grade-

point average of 1.75 for promotion to the third year; a minimum cumulative grade-point average of 2.0 for promotion to the fourth year; and a cumulative grade-point average of 2.0 for graduation. Outstanding students may be considered for graduation upon completion of the third summer session.

## Requirements for Degree

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.
2. Shall have completed the prescribed curriculum for each of the academic sessions.
3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.
4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

Attendance at the spring Commencement is voluntary. If you don't plan to attend, leave the complete mailing address to where you want your diploma mailed at the Dean's office.

## Curriculum

The School of Dentistry recognizes its obligation to produce professionals capable of meeting the dental health needs of society and providing leadership for the dental profession. Therefore, the school offers a four-year program leading to the degree of Doctor of Dental Surgery that provides students with a learning environment in which to develop the technical competence, intellectual capacity, and professional responsibility necessary to meet the dental health needs of a society in a state of constant transformation. In order to insure the achievement of these goals, the dental curriculum is continually reviewed and revised.

The basic required courses in the curriculum are presented throughout the first six semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general practice track, basic biologic science track, and specific clinical interest track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. Fourth-year students are required to register for at least 3 hours of electives during each semester enrolled and must register for those clinical courses requiring added clinical experience to attain competency.

# SCHOOL OF DENTISTRY CURRICULUM PLAN

	First Year (1,200 hr.)	Summer Session (320 hr.)	Second Year (1,200 hr.)	Summer Session (320 hr.)	Third Year (1,200 hr.)	Summer Session (320 hr.)	Fourth Year (1,200 hr.)
				Basic Dental Science	Basic Biologic Science	Bio-Clin. Sci. Comm. Dent.	
100		Basic Dental Science	Basic Biologic Science	Bio-Clinical Sciences		Clinical Dentistry	
				Comm.Dent.			
200	Basic Biologic Science	Bio-Clinical Sciences		Clinical Dentistry	Bio-Clinical Sciences		Electives and Clinical Dentistry
		Clinical Dentistry	Basic Dental Science	Unsched.		Unscheduled Time	
300		Unsched.					
400					Comm. Dent.		
500							
600	Basic Dental Science		Bio-Clinical Sciences		Clinical Dentistry		
700							
800			Comm. Dent.				
900	Bio-Clinical Sciences		Clinical Dentistry				
	Comm. Dent.						
1,000	Clinical Dentistry						Unscheduled Time
	Unscheduled Time		Unscheduled Time		Unscheduled Time		
1,100							
1,200							



At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and at the same time serve as a means of encouraging students to continue their education throughout their professional careers.

The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairman and the Assistant Dean for Instruction. The student will pursue the approved curriculum through completion of the D.D.S. program.

As a part of the curriculum, fourth-year students are required to participate in mock board examinations.

All students are required to receive at least six weeks of clinical training in the School of Dentistry's extramural program. Students must complete satisfactorily all courses attempted.

Outstanding students having an accumulated grade-point average of 3.0 or above, having developed competency in all clinical disciplines, and having met all other requirements are eligible for consideration for graduation at the end of the third eight-week summer session.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and renders a much needed service to several thousand patients annually.

## Books and Instruments

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses.

## Organizations

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the

# SCHOOL OF DENTISTRY COURSE SCHEDULE

	1st. Sem.	2nd. Sem.	S.		1st. Sem.	2nd. Sem.	S.
<b>First Year</b>				<b>Third Year</b>			
300 — Anesthesiology			x	350 — Removable Prosthodontics (5)			
303 — Oral Diagnostic Techniques		x		352 — Community Dentistry (6)			
304 — Operative Dentistry (1)		x		353 — Oral Oncology			
305 — Biochemistry		x		354 — Community Dentistry (7)			
306 — Gross Anatomy (Trunk and Extremities)	x			355 — Clinical Pathology Correlation Conference		x	
307 — Gross Anat. (Head and Neck Neuroanatomy)		x		357 — Fixed Prosthodontics	x	x	x
309 — Microanatomy and Organology	x			358 — Operative Dentistry (5)	x	x	x
310 — Dental Anatomy and Occlusion	x			359 — Oral Surgery (2)	x	x	x
311 — Periodontics (1)			x	360 — Pharmacology	x		
312 — Dental Materials	x			361 — Pedodontics (3)	x	x	x
313 — Removable Prosthodontics (1)	x			362 — Endodontics (3)	x	x	x
314 — Fixed Prosthodontics (1)			x	363 — Periodontics (3)	x	x	x
315 — Community Dentistry (2)		x		364 — Oral Diagnosis (2)	x	x	x
316 — Removable Prosthodontics (2)			x	365 — Clinical Orthodontics (1)	x	x	x
318 — Oral Histology and Embryology		x		367 — Clinical Oral Roentgenology (1)	x	x	x
320 — Community Dentistry (1)	x			371 — Dental Practice Management (2)	x	x	x
321 — Endodontics (1)			x	372 — Dental Practice Management (Ethics) (3)	x		
322 — Operative Dentistry (2)			x	373 — Dental Practice Management (4)	x		
323 — Clinic Orientation			x	374 — Principles of Medicine (4)	x		
<b>Second Year</b>				<b>Fourth Year</b>			
301 — Microbiology	x			375 — Dental Practice Management (5)	x		
325 — Dental Practice Management (1)		x		376 — Removable Prosthodontics (6)	x		
326 — Community Dentistry		x		377 — Periodontics (4)	x		
327 — Oral Roentgenology	x		x	380 — Endodontics (5)	x		
328 — General Pathology	x			382 — Advanced Oral Histopathology (Elective)	x		
329 — Operative Dentistry	x			383 — Operative Dentistry (6)	x		
330 — Community Dentistry (4)				384 — Oral Surgery (3)	x		
332 — Community Dentistry (5)				385 — Clinical Orthodontics (2)	x		
333 — Physical Diagnosis (1)		x		386 — Pedodontics (3)	x		
334 — Removable Prosthodontics (3)			x	387 — Oral Diagnosis (3)	x		
335 — Pedodontics (1)		x		389 — Fixed Prosthodontics (4)	x		
336 — Fixed Prosthodontics (2)	x		x	394 — Community Dentistry (8)	x		
337 — Oral Diagnosis (1)	x			395 — Hospital Dentistry (5)	x		
338 — Oral Pathology	x		x	396 — Clinical Oral Roentgenology	x		
339 — Oral Surgery (1)	x			397 — Special Topics*	x		
340 — Periodontics (2)		x	x				
341 — Removable Prosthodontics (4)		x	x				
342 — Endodontics (2)	x		x				
343 — Fundamentals of Physiology		x					
345 — Principles of Orthodontics		x					
346 — Orthodontics Technics		x					
347 — Management of Medical Emergencies (2)		x	x				

\*See Courses of Instruction in Dentistry.

educational program of the School of Dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

*Dental Fraternities.* Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

## Courses of Instruction in Dentistry (Dent.)

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Assistant Dean for Instruction.

### Community Dentistry

Associate Professor McCutcheon (*Chairman*); Adjunct Associate Professor Murphy; Assistant Professors Ingersoll and Seime; Instructor Meckstroth; Visiting Educational Specialist Hutton.

- 315. *Community Dentistry 2.* II. 3 hr. A course encompassing the study of professional communication and the introduction to the theory and practice of preventive dentistry.
- 320. *Community Dentistry 1.* II. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
- 326. *Community Dentistry 3.* II. 2 hr. A course covering the principles of human behavior and their application to understanding patient problems, patient management, and dentist-patient communication.
- 330. *Community Dentistry 4.* II. 1 hr. Lectures and field experience provide the student with the basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
- 332. *Community Dentistry 5.* S. 1 hr. A course providing lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition and microbiology.
- 352. *Community Dentistry 6.* I, II. 2 hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
- 354. *Community Dentistry 7.* II. 1 hr. PR: Departmental consent. A course of lectures covering the origin and development of dentistry.
- 394. *Community Dentistry 8.* I, II. 1-15 hr. Continued field experience in various aspects of community health.



## Dental Anatomy

Associate Professor VandenBosche; Assistant Professors Foor and Rodeffer; Instructor Hurst.

310. *Dental Anatomy and Occlusion* . I. 4 hr. Anatomy of individual teeth, both permanent and primary, in regard to form and function and their static and dynamic occlusal relationships.

## Dental Practice Management

Professors Puderbaugh (*Chairman*) and Thomas; Assistant Professors Boaz and Walker; Adjunct Assistant Professor Crowe; Instructors Hickman and Hurst; Lecturer Cady.

325. *Practice Management 1*. II and S. 2 hr. (Dental Auxiliary Utilization.) Designed through didactic and clinical experience to prepare dental students in the concepts of four-handed dentistry.
371. *Practice Management 2*. Yr. and S. 4 hr. PR: Dent. 325. Fundamentals of practice management, including organization and development of the practice, personnel and financial management, introduction of TEAM dentistry, continuation of clinical practice using auxiliaries, including those trained in expanded functions.
372. *Practice Management 3*. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.
373. *Practice Management 4*. II. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
375. *Practice Management 5*. I, II. 1-2 hr. PR: Dent. 371. Continuation of clinical practice using auxiliaries, including those trained in expanded functions.

## Dental Materials

Professors Overberger and Gaver; Assistant Professors Hart and Weaver.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Endodontics

Professors Alberico (*Chairman*), Biddington, and Griffin; Associate Professor Skidmore; Assistant Professor Balaban; Instructors Baur, Funderburk, and Swartz.

321. *Endodontics 1*. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
342. *Endodontics 2*. Yr. and S. 1 hr. Minor clinical endodontic procedures which will stress the application of principles presented in Dent. 321.
362. *Endodontics 3*. Yr. and S. 2 hr. PR: Dent. 321, 342. Lectures on rationale, diagnosis, prevention and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae; also correlating and applying the basic biological and basic dental sciences in the treatment of pulpal and periapical disease.
380. *Endodontics 4*. I and II. 1-2 hr. Continued clinical endodontics stressing the diagnosis and treatment of endodontic problems.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Hospital Dentistry

Professors Knapp, Lapp, Waldman, and Welch (*Chairman*); Clinical Professor Moorman; Assistant Professors Bakos and Frome; Clinical Assistant Professors Satzer, Syner, and Wine; Clinical Instructors Fagan, Hancock, Patthoff, and Simon.

- 333. *Physical Diagnosis 1*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
- 347. *Management of Medical Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
- 349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.
- 374. *Principles of Medicine 4*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.
- 395. *Hospital Dentistry Practicum*. I, II, S. 1-15 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in Dent. 349.

## Operative Dentistry

Professors Sausen (*Chairman*) and Gaver; Associate Professors Chapman and VandenBosche; Assistant Professors Foor, Frye, Hart, Kelly, Naylor, Rodeffer, and Weaver; Instructors Dieterick, Gladwin, Jackson, and Mason.

- 304. *Operative Dentistry 1*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Gold inlay technique introduced. Characteristics and treatment of caries emphasized.
- 322. *Operative Dentistry 2*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Preparation is made for entering clinical activity. Certain fundamentals of pedodontics introduced.
- 329. *Operative Dentistry 3*. I. 2 hr. Initiation of clinical practice with comprehensive examinations and treatment planning of assigned patients. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.
- 348. *Operative Dentistry 4*. Yr. and S. 3 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Clinical practice is expanded, and includes a significant number of gold restorations.
- 358. *Operative Dentistry 5*. Yr. and S. 3 hr. More complex and advanced techniques for clinical practice and new developments throughout the scope of operative dentistry. Clinical practice expanded to provide experience in all classifications of restorative procedures.
- 383. *Operative Dentistry 6*. I and II. 2-4 hr. Clinical experience course in which additional cases are treated to improve upon efficiency and finesse. Sufficient variety and depth of experience is obtained to reach adequate competence for independent practice of operative dentistry.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Diagnosis and Radiology

Professors Graham (*Chairman*) and Thomas; Assistant Professors Bowers, Pifer, and H. Smith.

- 303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive health care.
- 327. *Oral Radiology*. I. Yr. and S. 1 hr. Physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
- 323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.
- 337. *Oral Diagnosis 1*. Yr. and S. 2 hr. Didactic instruction with further application of diagnosis procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
- 364. *Oral Diagnosis 2*. Yr. and S. 1 hr. Clinical application of principles presented in Dent. 337.
- 367. *Clinical Oral Radiology 1*. Yr. and S. 1 hr. Clinical application of principles presented in Dent. 303 and 327.
- 387. *Oral Diagnosis 3*. I and II. 1-2 hr. Continued clinical experience providing opportunities for further independent observation and analysis of clinical problems.
- 396. *Clinical Oral Radiology 2*. I and II. 1-2 hr. Additional clinical experience in oral roentgenology.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Pathology

Associate Professor Bouquot (*Chairman*); Assistant Professor Keyes; Instructor Gnepp.

- 338. *Oral Pathology I*. (For dental students.) II. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
- 353. *Oral Pathology II*. (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Continuation of Dent. 338.
- 355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
- 382. *Advanced Oral Histopathology*. (For dental and graduate students, residents and interns.) II. 1 hr. PR: Consent; Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
- 401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents and interns.) I, II, S. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.



## Oral Surgery

Professor Campbell (*Chairman*); Associate Professor Graves; Clinical Associate Professor Davidson; Assistant Professors King and Oliverio; Clinical Instructor Cogan; Visiting Lecturer Wallace.

- 300. *Anesthesiology*. II and S. 1 hr. Introduction to general anesthesia; lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.
- 339. *Oral Surgery 1*. II and S. 2 hr. Didactic instruction and clinical experience in basic surgical principles as applied to the extraction of teeth, including classification and techniques for the surgical removal of impactions.
- 359. *Oral Surgery 2*. Yr. 4 hr. PR: Departmental consent. Classroom instruction in diagnosis and surgical and adjunctive treatment of diseases, injuries, and defects of human jaws and associated structures. Practical training obtained by assignments in the oral surgery clinic and in University Hospital.
- 384. *Oral Surgery 3*. I and II. 2-4 hr. Continuation course in oral surgical procedures including additional experience in the hospital environment.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
- 400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations and clinical applications.

## Orthodontics

Professor Merow (*Chairman*); Associate Professor Moore; Clinical Associate Professor Bonello; Assistant Professors Dempsey, H. E. Martin, Taich, and Willfong; Visiting Lecturers Caveney, Eckley, Howells, Jarrett, Schindler, and Taylor.

- 345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
- 346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
- 365. *Clinical Orthodontics 1*. Yr. and S. 2 hr. Case analysis, treatment planning, clinical practice, and seminars concerning interceptive, preventive, and adjunctive treatment of malocclusions.
- 385. *Clinical Orthodontics 2*. I and II. 1-2 hr. Continuing clinical management of selected malocclusion problems.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Pedodontics

Associate Professor Nash (*Chairman*) and Johnson; Assistant Professors Fenton, Gwynn, and Westfall; Instructors Hagen and Nicholson.

- 335. *Pedodontics 1*. Yr. and S. 3 hr. Lecture and clinical practice in preventive diagnosis and treatment of dental disease of children, including dental caries, pulpal therapy, appliance considerations, and child management.
- 361. *Pedodontics 2*. Yr. and S. 3 hr. Lectures and seminars on more advanced problems of children's dentistry including a number of congenital and systemic conditions related to oral health. Clinical practice in areas of child management, interceptive and preventive orthodontics, and applied restorative procedures.

386. *Pedodontics 3. I and II.* 1-2 hr. Additional opportunities for students to reach an adequate level of understanding and experience in pedodontics.
397. *Special Topics.* (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Periodontics

Associate Professor Morrison (*Chairman*); Assistant Professors Hornbrook, Pickle, and Wanker; Instructor Oliver.

311. *Periodontics 1. S.* 1 hr. Histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis and treatment planning. Laboratory instruction on correct periodontal instrumentation.
340. *Periodontics 2. Yr. and S.* 3 hr. Didactic and clinical instruction on diagnosis and treatment of periodontal diseases, including occlusion and selective grinding techniques.
363. *Periodontics 3. Yr. and S.* 2 hr. Didactic and clinical instruction correlating periodontics with all other areas of dentistry with continued clinical diagnosis and treatment of periodontal diseases.
377. *Periodontics 4. I and II.* 1-2 hr. Continued and additional clinical experience in clinical diagnosis and treatment of periodontal disease.
397. *Special Topics.* (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Fixed Prosthodontics

Professors Adams (Emeritus), Bianco (*Chairman*), and Tucker; Associate Professors Kwiatkowski and Ladwig; Instructors Bramble, Crowder, Metheny, and Smith; Visiting Lecturer Simpson.

314. *Fixed Prosthodontics 1. S.* 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
336. *Fixed Prosthodontics 2. Yr.* 5 hr. Lectures and laboratory exercises on principles and technics of crown and bridge prosthodontics. Types of dental bridges, their indications, and contraindications.
357. *Fixed Prosthodontics 3. Yr. and S.* Lectures and procedures employed in clinical practice. Types of dental bridges, their indications, and contraindications.
389. *Fixed Prosthodontics 4. I and II.* 2-4 hr. Clinical practice of crown and bridge prosthodontics. Emphasis on problems related to diagnosis and construction of more complex dental bridges.
397. *Special Topics.* (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Maxillofacial Prosthodontics

Professor Bianco (*Chairman*); Associate Professor Kluth.

397. *Special Topics.* (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Removable Prosthodontics

Professors Bianco (*Chairman*) and Somers; Associate Professor DeCounter; Assistant Professors Harper and VanRiper; Instructors Camele, Dalton, Lacy, Roth, and Sauter; Visiting Lecturer DiNapoli.

- 313. *Removable Prosthodontics 1*. I. 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.
- 316. *Removable Prosthodontics 2*. S. 1 hr. Lectures and laboratory practice in maxillo-mandibular relationships and occlusion.
- 334. *Removable Prosthodontics 3*. Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.
- 341. *Removable Prosthodontics 4*. S. 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.
- 350. *Removable Prosthodontics 5*. Yr. and S. 4 hr. Lectures and general clinical practice in complete and partial removable prostheses.
- 376. *Removable Prosthodontics 6*. I and II. 2-4 hr. Continued clinical practice in various and special removable prosthodontic procedures.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Advanced Education Programs

The School of Dentistry offers advanced education programs. The Department of Orthodontics offers a program of advanced study leading to the Master of Science degree. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Pharmacology and Toxicology, and Physiology and Biophysics. (See pages 34-48 of this *Catalog* or Part 4 of the *Graduate School Catalog*.) The Department of Oral Surgery offers one oral surgery internship and two residencies. Four general practice residencies also are offered by the School of Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Advanced Education Programs.

## Endodontic Program

### Master of Science

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry and is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be processed in the School of Dentistry and will be recommended to the Graduate School for admission. Applicants approved for admission to the program will be notified soon after January 15.



## Requirements for Admission to the Endodontic Program

1. Graduation from an accredited school of dentistry.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the Department of Endodontics all information requested in the departmental application form.

## Requirements for Master of Science Degree

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to endodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 57 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (7 hours).
6. Must have demonstrated satisfactory clinical competency in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

### Dentistry

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

### Endodontics

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: Ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 1 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
490. *Endodontic Teaching*. S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.
497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

### Microbiology

310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR: Consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. (Students can enroll for one to three parts.)
311. *Principles of Infection and Resistance*. I. 1-5 hr. PR: Consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students can enroll for one to three parts.)

## Pathology

382. *Advanced Oral Histopathology*. I, II. 1-2 hr. PR: Consent. Microscopic study of head and neck lesions.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

## Pharmacology and Toxicology

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.

## Statistics

311. *Statistic Methods I*. I, II, S. 3 hr. PR: Math. 3. Basic concepts of statistical models, distributions, probability, random variables, tests of hypothesis, confidence intervals, regressions, correlation, transformation, F and  $\chi^2$  distributions, analysis of variance, multiple range tests, missing plots, and sample size.

# Orthodontic Program

## Master of Science

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of 24 months (two academic years and two summers) of full-time residency in the School of Dentistry, and is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be recommended to the Graduate School for admission. Those applicants approved for admission to the program will be notified soon after January 15.

## Requirements for Admission to the Orthodontic Program

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the department all information requested in the department application form.

## Requirements for Master of Science Degree

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summers) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 50 credit hours. These include 35 hours of orthodontic courses, a minimum of 9 hours of selected basic sciences subjects, a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## Orthodontics (Dent.)

- 416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
- 417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
- 418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.
- 419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
- 420. *Cephalometrics*. I, II, S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
- 421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
- 422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
- 423. *Growth and Development*. I, II, S. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
- 425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
- 426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
- 497. *Research*. I, II, S. 1-15 hr.

## Dental Hygiene Program

The Dental Hygiene Program is a department of the School of Dentistry. The four-year dental hygiene curriculum combines the advantages of both a liberal arts and a professional education. This curriculum format has departed from the conventional, but there is a definite conviction that the inclusion of many disciplines provides greater strength to the program. The educational objectives of the Dental Hygiene Program are:

To prepare individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers of those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States. Presently, these services include: observation, recording, prevention, treatment, education, and communication.

To prepare individuals capable of performing the clinical skills delegated to any dental auxiliary (excluding the dental laboratory technician).

To prepare dental hygienists to teach clinical skills and to present didactic information in dental auxiliary education programs.

To prepare individuals capable of performing coordinative and administrative functions in public health and community related areas.

To prepare individuals for the dental hygiene profession who have a keen sense of social awareness and professional responsibility.

To prepare dental hygienists to continue their professional development past graduation through formal training, self-study, and independent thought.



To prepare individuals who have the capability to understand and adapt to new developments and changes in the scientific, sociologic, and practical factors pertaining to health.

To provide the educational foundation for higher education.

Upon completion of all requirements and with the recommendation of the School of Dentistry, the candidate is awarded a bachelor of science degree in Dental Hygiene.

The Dental Hygiene curriculum is structured in accordance with the standards specified for a Dental Hygiene Program by the Commission on Accreditation of the American Dental Association. The program has been fully accredited by this organization since 1965.

## Admission

Students enter dental hygiene as freshmen, and the general admission policies of West Virginia University are followed. The applicant must be a graduate of an accredited high school or preparatory school and have completed one unit of algebra, one unit of geometry, four units of English, biology, and chemistry. Good grades are expected, and applicants should rank in the upper one-third of their graduating class. Particular attention is given to academic achievement in science courses.

The American College Testing Program (ACT) examination is required of high school applicants. A high school counselor can supply information concerning this examination. The Dental Hygiene Aptitude Test is required of every applicant. A brochure with detailed information and instructions about this test is mailed with application materials or may be obtained by writing the American Dental Hygienists' Association, 211 East Chicago Ave., Chicago, IL 60611.

In addition to a special application form for dental hygiene, each candidate for admission is supplied with three standardized reference forms. Each applicant is requested to have these individuals return the forms directly to the Department of Dental Hygiene.

The personal qualifications, scholastic record, test scores, and recommendation of each applicant are reviewed by the Dental Hygiene Admissions Committee. After reviewing these credentials, the committee may request an interview with the applicant. If this is the case, the applicant is notified by letter of the date, time, and place of the interview.

The competition for entrance into dental hygiene is extremely keen. *Nonresidents should recognize that preference is given to West Virginia residents. Only those nonresidents with the highest qualifications will be considered.*

For application materials the applicant should write to the Department of Dental Hygiene, West Virginia University, or the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. Applicants should apply and complete aptitude tests as early as possible in the year preceding the year admission is desired. Applications are available in September and are not accepted after March 1.

## Promotion

At the end of each semester, the status of each dental hygiene student is reviewed by the Dental Hygiene Committee on Academic Standards. This committee then makes recommendations to the Dean. Final disposition in each case is the prerogative of the Dean and the Chairwoman of Dental Hygiene.

Unconditional promotion normally depends upon fulfillment of all course requirements and the attainment of both a minimum cumulative grade-point average and a minimum science-dental hygiene grade-point average. These minimum grade-point averages are: a 1.50 for promotion to the second year; a 1.75 for promotion to the third year; a 2.0 for promotion to the fourth year; and a 2.0 for graduation. The courses (or equivalents) utilized to calculate the science-dental hygiene grade-point average are:

Chemistry 11	Dental Hygiene 1	Dental Hygiene 154
Chemistry 12	Dental Hygiene 2	Dental Hygiene 155
Anatomy 101	Dental Hygiene 66	Dental Hygiene 168
Pathology 128	Dental Hygiene 85	Dental Hygiene 169
Pathology 129	Dental Hygiene 90	Dental Hygiene 172
Microbiology 26	Dental Hygiene 105	Dental Hygiene 174
Physiology 141	Dental Hygiene 120	Dental Hygiene 202
Pharmacology 160	Dental Hygiene 125	Dental Hygiene 205
Anesthesiology 300	Dental Hygiene 150	Dental Hygiene 206
	Dental Hygiene 152	

Students who do not qualify to be promoted unconditionally may be placed on probation or may be suspended from further studies in the Department of Dental Hygiene. Probationary status implies that the student will be allowed to make up deficiencies or be given an opportunity to repeat a year.

If a student is promoted on probation, the student must reach the required minimum standards specified above. Students on probation who do not obtain these standards will be reevaluated by the committee.

The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Professional Organizations

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of junior membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

*American Association of Dental Schools*. This association of dental educational institutions and faculties has as its primary purpose to promote and improve dental education. Dental hygiene students may join as student members.

*West Virginia University School of Dentistry Alumni Association*. Graduates of the Department of Dental Hygiene may join and participate in all activities of the Alumni Association.

## DENTAL HYGIENE CURRICULUM PLAN

First Year				Second Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>	<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Engl. 1	3	Engl. 2	3	Anat. 101	4	Physi. 141	4
P.E. 1	1	P.E. 2	1	Path. 128	2	Path. 129	3
Core A		Chem. 12	4	Dnt. Hy. 105	2	Pcol. 160	3
(Spch. 11 & 12)	3	Dnt. Hy. 2	3	Nutrn. 71	3	Dnt. Hy. 120	1
Core B (Psych. 1)	3	Dnt. Hy. 85	3	Ed. P. 105	3	Dnt. Hy. 125	4
Chem. 11	4	Dnt. Hy. 90	3	M. Bio. 26	4	Core B	
Dnt. Hyg. 1	2					(Soc. & A. 1)	3
Dnt. Hy. 66	1						
	<hr/> 17		<hr/> 18		<hr/> 18		<hr/> 18
Third Year				Fourth Year			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>	<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Dnt. Hy. 168	1	Dnt. Hy. 169	1	Dnt. Hy. 202	2	Dnt. Hy. 206	2-4
Core A (Elective)	3	Dnt. Hy. 174	2	Dnt. Hy. 205	6	Electives	
Ed. P. 260	3	Core B	3	Core B		Maximum	15
Dnt. Hy. 152	1	(Psych. 141 or 164)		(Upper Division		Minimum	12
Anes. 300	2	Core A (Electives)	6	Soc.&A.)	3		
Dnt. Hy. 172	2	Dnt. Hy. 150	2	Electives			
Dnt. Hy. 155*		Dnt. Hy. 155*		Maximum	7		
Dnt. Hy. 154*		Dnt. Hyg. 154*		Minimum	4		
					<hr/> 15-18		<hr/> 14-18

\*Year courses—Dnt. Hy. 155 = 6 credit hours; Dnt. Hy. 154 = 4 credit hours.

## Courses of Instruction in Dental Hygiene

Associate Professors Komives (*Chairwoman*) and Shoaf; Assistant Professors Boaz, Crystal, Frere, Graves, Kaplan, and Tseklenis; Instructor Taylor (part time); School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this *Catalog* or the *WVU Undergraduate Catalog*.)

### Dental Hygiene (Dnt. Hy.)

1. *Orientation to Dental Hygiene.* I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
2. *Introduction to the Dental Specialties.* II. 3 hr. PR: Dnt. Hy. 1 or consent. Survey of functions and responsibilities of each of the dental specialties. Emphasis on the role of the dental assistant and dental hygienist in each type of practice.
66. *Technical Expression and Dental Literature.* I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.
85. *Oral Anatomy.* II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.
90. *Oral Histology.* II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention.* I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.



120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education*. II. 2 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.
154. *Clinical Dental Hygiene*. I, II. 4 hr. PR: Dnt. Hy. 125. Lectures and clinical application of dental hygiene principles and technics.
155. *Expanded Functions*. I, II. 6 hr. PR: Enrollment in dental hygiene. Lecture, laboratory, and clinical course covering the materials and technics of restorative dentistry and expanded duties for the dental hygienist.
168. *Periodontics*. I. 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics*. II. 1 hr. PR: Dnt. Hy. 168. A sequential course to Dnt. Hy. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health*. I. 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
205. *Advanced Clinical Dental Hygiene*. I. 5-6 hr. PR: Senior enrollment in dental hygiene. Role of the dental hygienist in an orthodontic practice, pre- and post-operative care of surgical patients, and introduction to research. Students gain clinical experience in both traditional and expanded duties of the dental hygienist.
206. *Advanced Clinical Dental Hygiene*. II. 2-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.
220. *Special Topics in Dental Hygiene*. I, II. 1-22 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

# School of Medicine

The School of Medicine began as the College of Medicine in 1902. For ten years this program was affiliated with the College of Physicians and Surgeons of Baltimore, Md. In 1912 the School of Medicine had its formal beginning as an independent school offering the first two years of the medical curriculum. The School of Medicine moved from the Downtown Campus to the Medical Center in 1957 and inaugurated a four-year program in 1960. This coincided with the opening of University Hospital. In 1961, the first M.D. degrees were awarded to 15 students.

In 1945 the School of Medicine established a curriculum in Medical Technology leading to a degree of bachelor of science. The first graduates were awarded a combined degree by the College of Arts and Sciences and the School of Medicine in 1947. The Program of Medical Technology was established in the School of Medicine in 1961. The division of Physical Therapy was established and accepted its first class of 16 students in 1970. The division offers the final two years of a baccalaureate program leading to a degree in physical therapy.

West Virginia University Medical Center—Charleston Division was established in October, 1972, with the affiliation of WVU and the Charleston Area Medical Center. The Charleston Division offers programs for third and fourth-year medical students in a variety of required and elective courses.

West Virginia University School of Medicine—Wheeling Division was established in 1974. This program is available for many elective opportunities for students in the fourth year.

## Committees

*Academic Standards:* Charles R. Craig, *Chairman*.

*Biomedical Research Support:* Thomas J. Tarnay, *Chairman*.

*Dean's Committee to Clarksburg VA Hospital:* John E. Jones, *Chairman*.

*Educational Program Committee:* David J. Withersty, *Chairman*.

*Executive Faculty:* John E. Jones, *Chairman*.

*Faculty Promotion and Tenure:* Herbert E. Warden, *Chairman*.

*Medical School-Hospital Liaison to Student Body:* John E. Jones, *Chairman*.

*Student Admission:* Ruth M. Phillips, *Chairwoman*.

*Student Financial Aid:* David Z. Morgan, *Chairman*.

*Student Research Convocation:* Wilbert E. Gladfelter, *Chairman*.

*Admissions Committee for Physical Therapy:* Carolyn Crutchfield, *Chairwoman*.

*Advisory and Admissions for Medical Technology:* Carole B. Boyd, *Chairwoman*.

## Degree

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Combined M.D.-Ph.D. Program

This should be considered only by students who have shown exceptional interest and promise. All of the admission requirements of the School of Medicine and the Graduate School will apply. Specific course requirements and procedures for monitoring progress will be detailed by both schools.

## Admissions

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.

### When to Apply for Admission

Application for admission in August, 1980, should be made beginning June 1, upon completion of the 1978-79 school year. The latest date for filing an application is November 30, 1979. It is desirable for applicants to file early and to make certain that New Medical College Admission Test scores, current transcripts, and letters of recommendation are available to the Committee on Admissions.

### College Credit Required

The applicant should present a broad general education including a major in some field, not necessarily a natural science. The Admissions Committee needs evidence of excellence of academic performance and steady progress toward a goal.

An excess of credit hours or higher degrees does little to offset the disadvantages of low grades in securing admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from the West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Committee on Admissions.

English .....	1 year
Biological Sciences (with laboratory) .....	1 year
Inorganic Chemistry (with laboratory) .....	1 year
Organic Chemistry (with laboratory) .....	1 year
Physics (with laboratory) .....	1 year
Social or Behavioral Sciences .....	1 year

A total of 90 semester hours of work, exclusive of Military Science (ROTC) and Physical Education, is required.

It is recognized that applicants for medical school may have very diverse undergraduate backgrounds with a variety of majors. While many undergraduate courses, aside from the required prerequisites, might be beneficial in providing additional background for medical school, the choice of such courses should be determined by the academic strengths and weaknesses of the particular applicant.

### Medical College Admission Test

The scores of the New Medical College Admission Test (New MCAT) are used by the Admissions Committee in considering an applicant for admission. For this reason, it is strongly recommended that students take the test in the Spring before making application for admission. Delaying the test until Fall, even though all science courses may not have been completed, jeopardizes an applicant's opportunity since no final consideration is given until New MCAT scores are obtained by the Admissions Committee. No applicant can be considered who delays taking the New MCAT until Spring of the year of expected entry. Information concerning the time and place of the test can be obtained from your premedical adviser or committee. The New Medical College Admission Test is required of all applicants.



## **Personal Interview**

No applicant is admitted without an interview by the Committee on Admissions. Currently, all residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Committee on Admissions. The applicant is notified of the time and place of the interview. Interviews and consideration of applicants begin in September.

## **Conditions Following Acceptance**

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Committee on Admissions.

It should also be apparent that furnishing or causing to be furnished false information for the purpose of the School of Medicine application constitutes grounds for disciplinary action, including but not limited to expulsion or revocation of the acceptance.

## **Admission to Advanced Standing**

Increasing numbers of inquiries are being received seeking consideration of enrollment in the WVU School of Medicine with advanced standing. Only a limited number of such requests can be processed. Transfer ordinarily will be considered only at the end of the second year. The applicant must have passed Part I of the National Board of Medical Examiners examination and must present certification of good standing in the school from which the student is transferring.

## **Examinations and Evaluation of Student Progress**

It is the policy of the School of Medicine that the several departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. A Satisfactory (S) or Unsatisfactory (U) designation is formally recorded for each course. In addition, each department files in the Office of the Dean a narrative evaluation of the work of each student identifying strengths and weaknesses and suggesting remedial or corrective measures, if appropriate.

In addition to departmental examinations, which help serve as a basis for recording grades in individual courses, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion. National Board of Medical Examiners, Part I, examinations are given as part of the testing of achievement in individual disciplines and are incorporated in the final grade for that course. The student is encouraged to take the complete Part I examination as a candidate for National Board certification near the end of the second year. The Part II examination is required as a comprehensive test in clinical science at the end of the third year and results are incorporated in the final grades for clinical clerkships.

The overall performance of the student on the National Boards will be taken into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners examination is one mechanism by which a license may be obtained.

## Promotions

The Committee on Academic Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

1. The Committee on Academic Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the committee, the student's overall performance does not meet the academic standards of the School of Medicine. Every effort is made to avoid invoking harsh academic measures unless justified by a substandard academic performance by the student.

2. No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

3. All courses and all classes at the School of Medicine are graded as Satisfactory (S) or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The S and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

4. Readmission of a dismissed student is the prerogative of the Committee on Admissions after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic Standards.

5. Upon concurrent recommendation of the Committee on Admissions, the Committee on Academic Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

*In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.*

## Incomplete Courses

The grade of Incomplete (I) is given when the instructor believes the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure unless special permission to postpone the work is obtained from the Committee on Academic Standards (University rule.) It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses.

## Departure From Scheduled Work

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of Medicine. This permission is not valid until it has been reported to the Assistant to the Dean of Admissions and Records, Medical Center, for record.

## Honor Code

Students in the School of Medicine agree to abide by the provision of an honor code which requires ethical and moral standards of conduct in all situations.

## Immunizations

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

## University Hospital and Outpatient Clinics

University Hospital and its outpatient clinics opened in the summer of 1960. It is dedicated to the education of students in the multiple disciplines of the health fields and to the advancement of knowledge in the sciences and arts concerned with health and illness.

Specialist services at University Hospital are provided through the staff of the clinical departments of the School of Medicine.

There are also facilities and staff for clinical laboratory service, diagnostic and therapeutic X-ray services, and such special examinations as electrocardiography, cardiac catheterization, and electroencephalography. Emergency facilities are available at all times.

## Organizations

Graduates of the School of Medicine have a *School of Medicine Alumni Association* devoted to the interests of students and graduates and to the encouragement of scientific and professional progress among its members and the medical profession generally.

*Student American Medical Association.* This organization has a chapter among the students of this school. An Auxiliary provides opportunities for student wives to meet and work together.

*Student National Medical Association.* This organization has among its objectives assistance in the recruitment and retention of minority students.

## Lectureships

*Alumni Lectureship.* Annually some outstanding physician is brought to the WVU Medical Center under School of Medicine Alumni Association sponsorship to address the student body.

*Gideon Stanhope Dodds Lectureship.* A periodic lectureship, founded by a group of alumni and friends, honors Dr. Dodds, late professor emeritus of histology and embryology.



# Curriculum Plan

## First and Second Years

The plan of study is directed toward the principles and methodology of the medical basic sciences. However, the basic courses are designed so that the student begins to integrate concepts of patient care.

The student has the opportunity of an additional early exposure to patient-oriented instruction through the introduction to physical diagnosis and community medicine in the first term of the freshman year.

With the recognition that entering medical students have a wide variety of interests and backgrounds, elective opportunities are offered in the basic science years, beginning with the second term of the freshman year. The permissible elective courses or plans of study have broad limits and need not be confined to the Medical Center. The intention is to encourage responsible student initiative.

See Medicine I and Medicine II charts for representative schedules.

## Third Year

A tightly-structured traditional third year gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students will spend part or all of the year in specified clerkships at the Charleston Division of the WVU Medical Center or other affiliated programs as designated by the faculty of the School of Medicine.

## Fourth Year

The fourth year is selective. The student chooses one of three "tracks" and works with advisers at each track to select the individual program. The general track is appropriate for: (1) the student pointing toward family practice, and (2) the student who has not selected a particular speciality interest.

The student chooses a specialty track by department, and may already recognize an attraction to a sub-specialty within that department. The research track offers opportunity to spend much of the fourth year in medical or biological research.

Sixteen of the 44 weeks must be spent in intramural programs. In addition to programs on the Morgantown campus, the programs at the Charleston Division—WVU Medical Center, qualify as intramural. A similar designation for specific programs is in development at the Wheeling Division—WVU School of Medicine and the Veterans Administration Hospital in Clarksburg. A folder is available which lists the approved intramural selective options.

A number of assigned fourth-year students will take all of their clerkships at the Charleston Division of the WVU Medical Center.

The Joint Council of Teaching Hospitals, working with physicians in various communities and the School of Medicine, has developed extramural selective opportunities at a number of hospitals in West Virginia. Alternatively, the selectives may be spent at a university or university-affiliated hospital.

Every student has the opportunity for 4 weeks of vacation. The student may choose valuable medical experience for vacation time.

A separate booklet lists the extramural in-State electives and provides specific guidelines for the fourth-year curriculum.

## MEDICINE I

**FIRST SEMESTER**  
WEEKS      5      10      15

**SECOND SEMESTER**  
WEEKS      5      10      15

CONTACT HOURS PER WEEK

4	Physiology
8	Microanatomy
12	Gross Anatomy
16	
20	Biochemistry
24	
28	CPC and Medical Center Hour
32	
36	Elective and Study Time

4	Neurobiology
8	
12	Gross Anatomy
16	
20	Physiology
24	Community Medicine
24	Behavioral Medicine & Psychiatry
28	CPC and Medical Center Hour
32	
36	Elective and Study Time

## MEDICINE II

**FIRST SEMESTER**  
WEEKS      5      10      15

**SECOND SEMESTER**  
WEEKS      5      10      15

CONTACT HOURS PER WEEK

4	Pathology
8	
12	
16	Microbiology
20	
24	Behavioral Medicine & Psychiatry
28	Physical Diagnosis
32	CPC and Medical Center Hour
36	Elective and Study Time

4	Pathology
8	
12	
16	Pharmacology
20	Genetics
24	Community Medicine
28	Physical Diagnosis
32	CPC and Medical Center Hour
36	Elective and Study Time

**MEDICINE III****Clerkships****WEEKS**

12	Medicine
12	Surgery
12	Behavioral Medicine and Psychiatry
	Obstetrics and Gynecology
12	Pediatrics
	Neurology, Pediatrics OPD, Acute Medicine
48	TOTAL



**MEDICINE IV**  
Three Alternative Tracks

WEEKS	GENERAL	SPECIALTY	RESEARCH
4	Vacation	Vacation	Vacation
12	Special Selective Advisory Group Concurrence	Special Selective Department Chairperson Concurrence	Special Selective Advisory Group Concurrence
8	Clinical Neuro Sciences, Behavioral Medicine and Psychiatry, Radiology Ob Gyn or Pathology Including Clinical Pathology	Department Chairperson Approval	Advisory Group Approval
8	Medicine and or Pediatrics, Including Sub Specialty Units		
8	Surgery, Including Sub Specialty Units		
4	Acute and Ambulatory Care		
44	TOTAL		

## Courses of Instruction

### Anesthesiology (Anes.)

Professors Knapp (*Chairman*), Burke, Heironimus, and Kennedy; Associate Professors Howie, Rick, Martinez, and Smith; Assistant Professors Bettinger, Henrick, Rajarathnam, and Zavisca; Research Instructor David; Clinical Professors Reier and Weeks; Clinical Associate Professors Cwik, Hall, Lilly, Rodman, Tercan, and Zeedick; Clinical Assistant Professors Bergman, Kessell, and Shoub.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)
331. *Clinical Clerkship in Anesthesiology or Acute Medicine. (Third Year.)* CR.  
*A. Lectures to Third-Year Students on Topics Related to Anesthesiology.* (Lecture Series is part of Surgery 361.)  
*B. Clinical Clerkship in Acute Medicine.* Clinical Clerks will participate in pre-anesthetic evaluation, systemic anesthesia, monitoring, airway management, respiratory care, fluid and blood therapy, clinical pharmacology, cardiopulmonary resuscitation, pain management, and local anesthesia. Seminars, didactic lectures, journal club, rounds, and clinical experience in the intensive care unit and operating theater will be provided. (Duration: 2 weeks.)
399. *Selective Experiences in Anesthesiology (Fourth Year.)* CR. (See Conjoined Courses.)  
*A. Clinical Anesthesiology.* Participation in all aspects of anesthetic management and care. Operating room, recovery room, intensive care unit, conferences, seminars and rounds: Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)  
*B. Intensive and Respiratory Care.* Direct participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)
497. *Anesthesiology Research.* 1-15 hr. Participation in ongoing clinical laboratory projects including: The effects of benzodiazepine derivatives as premedicant, induction and amnesic agents for anesthesia; monitoring techniques in the critically ill; pathophysiology of the airway and lung; biochemical and ultra-structural studies of the metabolism of neurotransmitters from central and peripheral nerves; to learn research techniques; newer methods of physiological measurements in critically ill patients. Computer monitoring in intensive care. Duration: 4-24 weeks. Offered: By arrangement. Max. enrollment: 2.

### Behavioral Medicine and Psychiatry

Professors Carter, Flink, Hein, Kelley, Morgan, Quarrick, Waldman, and Watne; Associate Professors Stevenson (*Acting Chairman*), Clayman, Cone, Hlusko, Linton, Morgan, Porterfield, Seime, Upthegrove, and Withersty; Assistant Professors Brallier, Claude, Colvin, Dreyer, Ellis, Hobbs, Ingersoll, Kelley, Kommor, Robison, Scobbo, Shemo, Walker, Williams, and Yazel; Instructors Miller and Wochenfuss; Clinical Professors Ayd, Bateman, Carruth, Crawford, Rossman, Schein, and Staples; Clinical Associate Professors Comer, Edwards, Goodman, Hibbard, Knapp, Moriarty, Panepinto, Rogers, Srebalus, Wanner, Ward, and Weise; Clinical Assistant Professors Allen, Baranowski, Callahan, Capage, Dorsey, Dunning, Edelstein, Fawley, Fink, Goldberg, Hoback, Inger, Kerns, Kovacevich, Ledwell, McCauley, McNeer, Naviaux, Pittman, Portz, Sine, D. H. Smith, L. E. Smith, R. S. Smith, Webb, and Zarski; Clinical Instructors Case, Hunter, Panepinto, Revell, and Starkey.

311. *Introductory Psychiatry*. (First Year.) 1 hr. Clinical syndromes with discussion of various patterns and defense mechanisms.
321. *Introductory Psychiatry*. (Second Year.) 2 hr. Developmental, interpersonal, and intrapsychic aspects of distorted behavior patterns.
341. *Clinical Clerkship in Psychiatry*. (Third Year.) CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry and participation in diagnosis and treatment of psychiatric disorders.
355. *Behavioral Science and Health Care*. Behavioral science applied to issues related to physical and mental health care. Variety of topics will be considered, such as study of interpersonal roles and games, various cultural "healing" practices, personal and social aspects of illness, family disorganization, and hospitals and related institutions.
399. *Selected Experiences (Fourth Year) in Behavioral Medicine and Psychiatry*. (See Conjoined Courses.)

## Community Medicine (C. Med.)

Professors Pearson (*Chairman*) and Mou; Clinical Professors Pickett and Staples; Associate Professors Hall, Holland, Krall, and Parkinson; Adjunct Associate Professor Carlton; Clinical Associate Professors Arnwine, McCoy, Merchant, and Wiles; Assistant Professors Bosanac and Wyant; Clinical Assistant Professors Hinton and Ortmeyer; Adjunct Assistant Professor Harper; Clinical Instructors Atfield, Castellan, Englebert, McKay, and Reger.

312. *Community Medicine*. (Second Year.) II. 2 hr. Open to limited number of graduate students. PR: Consent. The determinants of states of health in a community; interrelationship of demography, economics, sociology and anthropology, environmental and occupational hazards, and the organization of public health and medical care systems.
322. *Epidemiology and Biostatistics*. (First Year.) II. 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.

## Conjoined Courses (CC MD)

399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of first three years of the medical curriculum. (Graded as S or U.) The selective program offers a wide range of opportunities in the basic sciences, medical specialties, and sub-specialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the WVU Medical Center—Charleston Division, WVU School of Medicine—Wheeling Division, and the Veteran's Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans an individual program, with faculty advice. Flexibility is permitted. With consent of instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See intramural and extramural brochure, published annually, describing the selective opportunities.)

## Family Practice

Professors Traubert (*Chairman*), Pearson, Tully, and Vazquez; Professor Emeritus Sleeth; Associate Professors Carper and Weart; Assistant Professors Heslen, Svoboda, and Weisser; Clinical Professors Davis, Flood, Jarrett, and Simmons; Clinical Associate Professors Dunn, Fullmer, Kellas, Sinclair, and Newman; Clinical Assistant Professors Burke, Crigger, Dickey, Eckmann, Hess,



Hofreuter, J. E. Jackson, Patton, Reed, Ritz, Sine, and Stemple; Clinical Instructors Clark, Harris, Hayes, and Wack; Nurse Clinician Nath; Patient Educator Murray.

399. *Selected Experiences in Family Practice. (Fourth Year.)* (See Conjoined Courses.)

## Medicine

Professors Waldman (*Chairman*), M. Albrink, W. E. Anderson, Andrews (Vice President), Flink, Harris (Chairman, Division of Cardiology), Jain, J. Jones (Dean), Lapp (Chairman, Division of Pulmonary Diseases), D. Z. Morgan (Associate Dean), Mou (Dean, Charleston Division), O'Toole, Ortel, W. Point (*Assistant Chairman*), Raich (Chairman, Division of Hematology/Oncology), Shane (Chairman, Division of Metabolism/Endocrinology; *Associate Chairman*), Taylor, and Welton (Chairman, Division of Dermatology); Associate Professors Bekheit, DiBartolomeo (Chairman, Division of Rheumatology), Kluge (Chairman, Division of Infectious Diseases), Lynch, McIntosh, Merchant, Milutinovich (Chairman, Division of Nephrology), E. Morgan, Pakrashi, Rick, Scobbo, Shultz (Chief of Medicine, Wheeling Division), Ullrich, and Withersty; Assistant Professors Beall, Boehlocke, Chillag (Chairman, Division of General Medicine), Colvin, Crouch, D'Allessandri, Deglin, Finch, Ganguly, Georgiev, Grubb, Hawley, D. Hendrick, Hobbs, Hodous, Howie, D. Jones, Khakoo, Pearson, Peters, Piccirillo, Rogers, Shemo, Stratton, Subramanian, Walker, C. Warren (part-time), and Williams; Instructors Banks, Blehschmidt, A. Hendrick, Hoover, Houston, Khalil, McKay, L. Martin, R. Martin, Mateer, Seaton, Shannon, and Swan; Clinical Professors Emeritii Pushkin, Tuckwiller, and Whittlesey; Clinical Professors Lewis, McMillan, Marshall, Pfister, Reiter, Saville, Selinger, and Skaggs; Clinical Associate Professors W. T. Anderson, Artz, Avington, Basu, Blatchley, Carter, Chvasta, Conley, Davidson, Gaziano, Hartman, Jackson, R. Jones, Koppel, D. Lee, Nestman, R. Point, Renn, Revercomb, Santer, Scheer, and S. Warren; Clinical Assistant Professors Arnett, Avashia, Flombaum, Gainer, Glick, Gustke, Hall, MacCallum, Latos, McConnell, Masilamani, Mazzocco, Palmer, Parsons, Ratel, Rhudy, Shafi, Subbiah, C. Warren, and Zaldivar; Clinical Instructors Gomez, A. Lee, Lim, MacCallum, and Spiggle.

321. *Physical Diagnosis—An Introduction to Clinical Medicine. (Second Year.)* Yr. 4-hr. PR: Consent. Examination of normal subjects. Practical experience in history-taking and physical examination of patients.

331. *Clinical Clerkship in Medicine. (Third Year.)* CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the several departments. Clerkship in medicine occupies 12 weeks.

399. *Selected Experiences in Medicine (Fourth Year.)* CR. (See Conjoined Courses.)

## Neurology (Neuro.)

Professors Gutmann (*Chairman*), Chou, Gutrecht, and Martin; Associate Professors Azzaro, Fakadej, and Svoboda; Assistant Professors Crosby and Hobbs; Instructor Mateer; Clinical Professor Poffenbarger; Clinical Assistant Professors Kettler, Morehead, Morgan, and Pratt

341. *Clinical Clerkship in Neurology. (Third Year.)* CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.

399. *Selected Experiences in Neurology, (Fourth Year.)* CR. (See Conjoined Courses.)

## Obstetrics and Gynecology (Obst.)

Professors White (*Chairman*), Butcher, and Fugo; Associate Professors Cox, Durkin, Hunter, McIntosh, and Sehgal; Assistant Professor Foss; Instructor Pearcy; Clinical Professors Bonney, Chambers, and Patchell; Clinical Associate Professors Behnam, Giustini, Grubb, Mairs, Maxson, Palladino, Poole, Stone, and Williams; Clinical Assistant Professors Battaglino, Cumutte, D. Georgiev, Greco, Keefer, Kerr, Pak, Sims, Stevens, Tomhave, and VanRiper; Clinical Instructors Berry, McKinley, Sandhu, and Withersty.

341. *Clinical Clerkship in Obstetrics and Gynecology*. (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small-group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students are involved with care of all patients, participating in an essential role in patient care. Experience extends to out-patient clinics in all aspects of obstetrics and gynecology.
399. *Selected Experiences in Obstetrics and Gynecology*. (*Fourth Year*.) An elective subinternship in obstetrics and gynecology with major responsibility for patient care beyond that provided during the third-year curriculum. Students participate in out-patient and in-patient care with delegation of responsibility commensurate with level of training and ability. Supervision is provided by house officers and faculty. Greater participation in surgical procedures is provided, as well as active participation in complicated obstetrical patients.

## Pediatrics (Pedia.)

Professors Klingberg (*Chairman*), B. Jones (*Assistant Chairwoman*), Kelley, and Pomerance; Associate Professors Amato, Fakadej, Neal (*Chairman, Pediatric Cardiology*), Phillips, Ross, Svoboda, Tenney, and Wible; Assistant Professors Dworkin, Mullett, and Myerberg; Instructor Sutherland; Clinical Professors Harrison, Potterfield, and Stabins; Clinical Associate Professors Jakubec, Leslie, Lewine, and Morris; Clinical Assistant Professors Ayoubi, Burech, Crittenden, Hoylman-Ayoubi, Israel, Kleiner, Menchavez, Morgan, Munoz, Rhee, Shawkey, and Staab; Clinical Instructors Majumder, Thatcher, Uy, Verma, and Wolf.

331. *Clinical Clerkship in Pediatrics*. (*Third Year*). CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.
370. *Genetics*. (*Second Year*). Introduction to the understanding of genetics and heritable diseases in man.
399. *Selected Experiences in Pediatrics*. (*Fourth Year*). (*See Conjoined Courses*.)

## Radiology (Radiol.)

Professors Gabriele (*Chairman*) and Frich; Associate Professor Hogan; Assistant Professors Cosmann, Elyaderani, Kumar, Kunst, Lai, Sinha, and Slack; Instructors Goodwin and Navarro; Clinical Professors Aceto, Butler, Castro, Ellswood, Goodwin, Kennard, and Ozarda; Clinical Associate Professors Hayes, Sexton, Szalontay, Williams, and Yost; Clinical Assistant Professors Ampil, Barger, Haslam, Jennings, Koh, Lampton, Leef, Nagarajan, Smith, Stupar, Tanguilig, Wheatley, and Wymer.

The radiology staff aids in the instruction of students at all levels of the curriculum. They assist in the teaching of topographic anatomy in the first year. The careful interpretation of roentgenograms is an integral part of each clinical service.

101. *Radiology*. Selected experiences in general radiology.
102. *Neuroradiology*. Review of neuroanatomy with respect to application in neuroradiology. Selected experiences in neuroradiology.
103. *Cardiovascular Radiology*. Review of anatomy and embryology. Selected experiences in central and peripheral vascular radiology.

104. *Radiologic Physics*. Application of physics and mathematics to radiology, nuclear medicine, and radiation therapy.

399. *Selected Experiences in Radiology*. (Fourth Year.) CR (See Conjoined Courses.)

## Surgery

Professors Watne (*Chairman*), Boland, Chou, Clark, Fox, Kandzari, Milam (*Chairman*, Division of Urology), Moran, Nugent (*Chairman*, Division of Neurosurgery), Sprinkle (*Chairman*, Division of Otolaryngology), Tarnay, Trotter (*Chairman*, Division of Ophthalmology), Veltri, Warden, and Zimmermann; Clinical Professors Bradford (*Emeritus*), Caudill, Dickinson, Easley (*Emeritus*), Gilmore, Hershey, McConnell, McDowell, Miller, Pickett, and Trenton; Associate Professors Cody, Colasanti, Lass, and Mawhinney; Clinical Associate Professors Bowers, Cather, Ghaphery, Hall, Jacquiss, Kamerer, King, Lane, Lim, McCoy, McCuskey, Malone, Mathias, Mendoza, Morgan, Roncaglione, Spencer, Trapp, Voss, and Wiley; Assistant Professors Ashby, Dahlen, Dunker, Harris, Hrabovsky, Kish, Kusminsky, Martin, Nally, Raju, Savrin, Villani; Clinical Assistant Professors Bangani, Bodenheimer, Boystany, Bryant, Callender, Chicklo, Cipic, Davis, Dickie, Dickinson, Dodd, Durig, Ghiz, Griswold, Haislip, Hall, Hatfield, Heilman, Heiskell, Hills, Holt, Humphries, Johnson, Kappel, Lee, Lindert, Majestro, Naranjo, Nichols, Oliverio, Paine, Pushkin, Reed, Schwarzbart, Sibley, Stemple, Tekieli, Touma, Whitaker, Wilkinson, and Wilson; Instructors Arkis, Flowers, Frome, Hutton, Marin, Nally, Sporck, Tenick, and Thompson; Clinical Instructors Cadogen, Kassiss, Linger, Loimil, Moidel, and Thrush; Research Associates Cricco, Maxim, Miike, and Lai.

301. *Introduction to Laboratory Animal Experimentation*. I. 3 hr. One lab. Lecture and laboratory course in environmental control, biology, and diseases of laboratory animals. Uses as animal models and techniques of handling, specimen collection, anesthesia, and surgery.

341. *Clinical Clerkship in Surgery*. (Third Year.) CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of house staff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.

399. *Selected Experiences in Surgery*. (Fourth Year.) (See Conjoined Courses.)

## Medical Technology Undergraduate Program

The undergraduate program in Medical Technology is under the administration of the School of Medicine. Students are admitted into the program leading to a bachelor of science degree after the completion of two years of premedical technology in an accredited college or university. The WVU medical technology program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and by the National Certification Agency for Medical Laboratory Personnel (NCA).

The undergraduate curriculum includes the premedical technology program, which is offered in the WVU College of Arts and Sciences and at Potomac State College in Keyser and the medical technology program which is offered in the School of Medicine.



Courses of the first two years (premedical technology) may be taken in any institution of recognized standing that offers the courses required for admission into the medical technology program.

Since the course of study of the last two years is of a professional nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses which introduce the student to the medical sciences and courses which prepare the student for the work of the senior year. During the senior year (the second year in the medical technology program) the student receives both didactic instruction and practical experience in the University Hospital laboratories.

The program's primary aim is to provide a strong undergraduate program in medical technology which leads to a Bachelor of Science degree and which provides an educational background acceptable for graduate work in the medical sciences. The purposes are: (1) to provide a program in medical technology which meets the academic standards of the University; (2) to provide medical technologists for clinical, public health, and research laboratories; and (3) to provide an educational background which enables students to prepare for teaching and supervisory positions in medical technology; and (4) to provide an educational background acceptable for graduate work in the medical sciences.

A program for certified medical technologists who desire to complete requirements for a Bachelor of Science degree is available. (Further information may be obtained by contacting the Medical Technology Programs Office.)

## Admission

Application for admission into the junior year (first year in the undergraduate medical technology program) should be made before the beginning of the second semester of the sophomore year in college. Students at WVU or Potomac State College are not transferred automatically from the preprofessional course (first two years) to the professional course (third and fourth years.) Students are selectively admitted to the program for their final two years of work.

Application forms for admission to the professional course are obtained from the office of the Assistant to the Dean of Admissions and Records, Medical Center. These forms should be completed and returned to that office no later than February 1, if the student expects to enter the succeeding first semester classes.

Admission to the third year is on the recommendation of the Admissions Committee to the Dean. A personal interview with the Committee is required. A minimum grade-point average (over-all and science) of 2.0 is required for admission.

### Admission Requirements

Complete information concerning WVU admission, fees and costs, registration, regulations, etc., may be found in the *Undergraduate Catalog* for the College of Arts and Sciences.

(a) Admission requirements for the first year (premedical technology) are those for the College of Arts and Sciences.

(b) Admission to the third year (first year of the medical technology program) is based upon two years of college work with a total of 64 hours as follows:

*English.* 6 hours. (Composition and rhetoric.)

*Biological Science.* 8 hours. (General biology or general zoology.)

*Chemistry.* 15-16 hours. (Inorganic chemistry, 8 hours; quantitative analysis, 3-4 hours; organic chemistry, 4 hours.) (Transfer students are required



to have a complete course in organic chemistry to include aliphatic and aromatic compounds.)

*Physics.* 8 hours.

*Physical Education.* 2 hours. (University requirements for students taking first two years in residence.)

*Mathematics.* 3 hours. (College algebra is the minimal requirement.)

Electives to complete the required hours and to meet WVU Core Curriculum requirements.

Courses such as bacteriology, parasitology, and anatomy should not be taken until after the completion of the sophomore year. A foreign language is recommended for students who plan to do graduate work.

### CURRICULUM PLAN Premedical Technology

First Year			
<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Chem. 15—Inorganic .....	4	Chem. 16—Inorganic .....	4
Engl. 1—Comp. & Rhet. ....	3	Engl. 2—Comp. & Rhet. ....	3
Math. 3 .....	3	Elective .....	3
Biol. 1 .....	4	Biol. 2 .....	4
P.E. 1 .....	1	P.E. 2 .....	1
M. Tec. ** .....	1	M. Tec. 2** .....	1
	16		16

Second Year			
<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Chem. 115—Quantitative .....	4	Chem. 131—Organic .....	4
Electives* .....	6-7	Electives* .....	6-9
Phys. 1 .....	4	Phys. 2 .....	4
M. Tec. 3** .....	3		
	17-18		14-17

\*Electives are to be selected to meet University Core Curriculum requirements.

\*\*Medical Technology 1, 2, and 3 are not required subjects. It is highly recommended that all students take these courses.

### Medical Technology

#### Third Year (Medical Technology I)

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
M. Tec. 100 .....	4	Parasitol. 224 .....	4
Bioch. 139 .....	5	M. Bio. 223 .....	5
Physi. 241 .....	4	Bioch. 239 .....	4
Elective .....	3	M. Tec. 101 .....	4
	16		17

## Fourth Year (Medical Technology II)

Students receive didactic and clinical instruction in the University Hospital laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. Students may be required to be "on duty" at irregular hours due to the professional nature of the collegiate program. Likewise, if the student has excessive absences during the senior year, the time loss must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	<i>Hr.</i>
M. Tec. 200—Orientation .....	No Credit
M. Tec. 201—Clinical Microbiology .....	7
M. Tec. 202—Immunohematology and Blood Banking .....	7
M. Tec. 203—Instrumentation .....	2
M. Tec. 204—Clinical Chemistry .....	7
M. Tec. 205—Laboratory Management .....	2
M. Tec. 206—Clinical Microscopy .....	2
M. Tec. 207—Clinical Histopathology .....	2
M. Tec. 208—Clinical Hematology .....	7
M. Tec. 209—Clinical Serology .....	2
M. Tec. 210—Seminar I .....	2
M. Tec. 210—Seminar II .....	<u>2</u>
	42

## Degree

The degree of Bachelor of Science in Medical Technology is granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Graduate Program

The WVU Medical Technology graduate program prepares graduate medical technologists for positions either as administrators and teachers in medical technology educational programs, or as supervisors in special areas of the clinical laboratory. The primary objective is to assist in development of knowledge in an area in administration, in education, or a special area of interest selected by the student which may be a special medical laboratory science as the specific area applies to laboratory medicine. Specializations include clinical chemistry, clinical microbiology, hematology, and immunohematology. The specific course work requirements for the master of science degree rests with the graduate adviser in the student's specific area of interest.

*Graduate Committee:* Professors J. Krall, B. Love, H. Mengoli, D. Moore, Jr., N. Rodman, and S. Jagannathan.

## Admission

Applicants must have a baccalaureate degree in medical technology from an accredited institution or a baccalaureate degree in an applied field and be a certified medical technologist with an acceptable certifying agency.

The area of concentration in medical technology desired by the student is considered in the evaluation of the undergraduate record as follows:

1. Individuals who desire to do special study in clinical chemistry, hematology, or immunohematology must have completed 8 hours of physics, 3 hours of mathematics, 4 hours of organic chemistry, and 4 hours of quantitative chemistry on the college level.

2. Individuals who desire to do special study in microbiology must have completed 4 hours of organic chemistry and 16 hours of biological sciences.

3. A minimum of one year's experience in a clinical laboratory is required for admission.

Students will be required to make up deficiencies in the above as well as other deficiencies deemed necessary by the adviser.

Applicants must have a minimum undergraduate grade-point average of 2.5 (based on A = 4.0 grade points) for admission.

Two letters of reference must be on file in the Medical Technology office. One letter should be from the major adviser in the undergraduate college and another from the immediate supervisor of the applicant's present position. An interview will be requested for all applicants who meet the requirements for admission.

Applicants are selected for admission on the basis of scholastic standing, recommendations, and interest in the field of medical technology. The number of applicants accepted is necessarily limited by the available facilities; and in general, applicants with the most experience are considered first.

### Application Procedure

A preliminary application is filed in the Medical Technology office.

Letters of recommendation are requested by the Medical Technology Programs Office.

After approval of the preliminary application, the admission procedure is the same as for other programs of the WVU Graduate School.

A personal interview may be required before final admission to the program.

### Course of Study

It is expected that the students who enter the graduate program in Medical Technology will have a goal in mind and a special field of interest in medical technology. The program is tailored to the needs of the student as far as possible. A minimum of 36 semester hours of credit including a research problem is required. The student selects a major area of concentration from either education, supervision, or administration, and a minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunohematology.

A minimum of 12 semester hours of course work in education to include the following is required of all students:

(A.) The three following courses are required:

Ed. P. 330—Advanced Education Measurements . . . . . 3 hr.

Ed. P. 320—Introduction to Research . . . . . 3 hr.

Ed. F. 320—Philosophic Systems and Education . . . . . 3 hr.

(B.) The student selects *one* of the following:

Hl. Ed. 305—Philosophy of Health Education . . . . . 3 hr.

Ed. P. 260—Instructional Media and Technology . . . . . 3 hr.

Ed. P. 360 or 361—Instructional Systems . . . . . 3 hr.

Ed. P. 450—Psychological Foundations of Learning . . . . . 3 hr.

Ed. P. 451—Principles of Instruction . . . . . 3 hr.

Ed. A. 331—Principles of Supervision . . . . . 3 hr.

Ed. A. 330—Principles of Education Leadership . . . . . 3 hr.

Ed. F. 300—Sociology of Education . . . . . 3 hr.

(C.) Ed. P. 311 (Statistical Methods) or Stat. 311 (Statistical Methods) is strongly recommended.

Other courses to complete 36 semester hours are selected by the student (with the help of the adviser) in the area of concentration selected by the student. Students may select courses in departments in schools other than the School of Medicine.

All students must complete a minimum of 18 semester hours in a science related to medical technology including Seminar (3 hr.) and Problem Study (6 hr.).

All students must rotate for orientation purposes through all sections of the University Hospital Clinical Laboratories to include microbiology, hematology, chemistry, immunohematology, and histopathology for a minimum of two days in each laboratory or a total of ten days.

In addition, at the discretion of the student's adviser, other requirements in teaching, supervision, and administration may be necessary.

The adviser works out with the student a plan of study for the entire graduate program. This plan is usually made at the end of the first semester of the student's graduate study. A copy of this "plan of study" is signed by the adviser and student and sent to the Medical Technology office to be put in the student's file.

### Examinations

A final written comprehensive examination in the major and minor interest areas is given approximately one month before the date on which the degree is to be awarded.

An oral defense of the problem is given one month after submission of the Problem Study in its final form to the Graduate Committee.

### Requirements for Degree

All requirements for the master of science degree, as outlined in the *WVU Graduate School Catalog*, must be fulfilled. These requirements can be fulfilled in three semesters of full-time work, but ordinarily at least four semesters are required for completion of the degree requirements.

Degree candidates must have a 3.0 grade-point average and must have removed all incomplete grades and deficiencies.

All students must complete a problem study (see M. Tec. 497).

### Medical Technology (M. Tec.)

1. *Orientation to Medical Technology*. I. 1 hr. Principles and practices of medical technology and the role of the medical technologist as a member of the health team.
2. *Orientation to Medical Technology*. II. 1 hr. Continuation of work of M. Tec. 1.
3. *Introduction to Clinical Pathology*. I. 3 hr. Introduces medical terms and illustrates the various aspects of patient care including laboratory diagnostic procedures the student will be doing the third and fourth years.
100. *Medical Technology*. I. 4 hr. Gross and microscopic structure of human body.
101. *Clinical Laboratory Diagnostic Methods*. II. 4 hr. Procedures used in the clinical laboratories.
200. *Orientation*. S. No credit (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics.
201. *Clinical Microbiology*. I, II, S. 7 hr. Lectures and laboratory practice in clinical bacteriology, mycology, and parasitology.
202. *Immunohematology and Blood Banking*. I, II, S. 7 hr. Lectures and laboratory practice in blood banking. Emphasis on procedures required for transfusions, preservation of blood, blood derivatives, and antibody studies.



203. *Instrumentation*. I, II, S. 2 hr. Basic physics and electronics as they apply to laboratory instruments.
204. *Clinical Chemistry*. I, II, S. 7 hr. Lectures and laboratory practice on procedures used in clinical chemistry laboratory. Advanced instruction in specialized technics.
205. *Laboratory Management*. II. 2 hr. Laboratory organization, economics, ethics, and records.
206. *Clinical Microscopy*. I, II, S. 2 hr. Lectures and laboratory practice in urinalysis, gastric analysis, pregnancy tests, and other procedures.
207. *Clinical Histopathology*. I, II, S. 2 hr. Lectures and laboratory practice in preparation of human tissues and organs for gross and microscopic examination.
208. *Clinical Hematology*. I, II, S. 7 hr. Lectures and laboratory practice in clinical serology.
209. *Clinical Serology*. I, II, S. 2 hr. Lectures and laboratory practice in clinical serology.
210. *Seminar*. I, II. 1-4 hr. Each student is required to present at least one seminar on some phase of medical technology.
300. *Seminar*. I, II, S. 1 hr. Student registers for 1 hr. each semester. Seminars include laboratory management, education in medical technology, and timely topics. Minimum of 3 hours of seminars to include all three topics is required.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration. This study is reported in a thesis-style manuscript. For this study and report, the student registers in M. Tec. 497. Total number of hours earned in M. Tec. 497 is determined by the student's adviser. As many as 9 semester hours may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M. Tec. 497 will be counted toward fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.

## Division of Physical Therapy

The Division of Physical Therapy, under the auspices of the School of Medicine, offers the final two years of a baccalaureate program leading to a degree in physical therapy.

The first two years of study may be completed in the College of Arts and Sciences of WVU, or any other accredited institution which offers courses comparable to the admission requirements of the Division of Physical Therapy. To be eligible for a degree a student must complete the final two years of the curriculum at WVU.

Admission to the third year is based upon 62 or more credit hours of study which satisfies the University Core Curriculum requirements and the prerequisites, or their equivalent, of the Division of Physical Therapy. *Registration in the first two years does not automatically assure the student a place in the junior class.* A student will be accepted on a competitive basis and selection will be based on scholastic standing and on those personal characteristics which are desirable in physical therapists.

The student must satisfactorily complete a three-month period of clinical internship before the awarding of the baccalaureate degree. A Certificate of

Proficiency in Physical Therapy then will be awarded which entitles the graduate to seek membership in the American Physical Therapy Association and to become eligible for state licensure for the practice of physical therapy. A physical therapist can practice professionally only after having passed the state board examination in the state where employment is desired.

A personal interview with the Admissions Committee is required. Only those students who have at least a 2.60 grade-point average and a 2.75 science average (on a 4.0 scale) and who will have completed all the prerequisites of the Division of Physical Therapy by the current Spring semester will be interviewed. Individuals who do not meet the above requirements but who believe extenuating circumstances justify admission may petition the Admissions Committee for an interview. Reasons why the application should receive special consideration should be clearly stated in the petition.

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.*

The Admissions Committee will advise the applicant of the time and place of the interview.

## Admission to the Professional Program

Official enrollment forms are available at the office of the Assistant to Dean, Admissions and Records, Medical Center, beginning December 1 of each year. Application forms should be returned no later than March 1 in the year admission is desired.

## Academic Standards

### Clinical Education Program

Students must satisfactorily complete the pre-internship clinical education program. During this time students will be expected to defray any and all costs of the program. The Clinical Internship Program is an 18-week program and is scheduled following the end of the last semester of the senior year. Before the student is allowed to leave for clinical internships the student must: (1) have completed *all* academic requirements of the program satisfactorily; (2) be of good health and have a full health insurance policy which will be in effect the entire 18 weeks of internship; (3) have an active professional liability insurance policy; (4) be prepared to defray the following types of costs: tuition, travel, room and board, and any incidental cost.

### Promotions and Suspensions

Physical therapy students must register for all prescribed courses for each semester, except by special permission from the Academic Standards Committee of the Division. Permission for repetition of work may be granted only by the Academic Standards Committee.

1. No student will be permitted to register for any work of second year until all courses for the preceding year have been completed successfully.

2. If in the opinion of the faculty that work completed in any unit of a course indicates that a student has a serious lack of understanding of that unit a grade of "I" (incomplete) will be submitted for that student. This may occur even though the student has an acceptable average of all units for the course. It is the student's responsibility to consult with the instructor about the means and schedule for removing incomplete grades.

3. A student who does not assume the responsibility for removing incomplete grades, or who fails to so do in a satisfactory manner, will be given an "F" for the course and will not be permitted to register for advanced courses.

4. No student will be permitted to register for clinical internships (Ph.Th. 290) until all other courses have been satisfactorily completed.

5. Notwithstanding the above rules, a student whose performance has been considered unsatisfactory by the Academic Standards Committee may be required, as a condition for advancement or graduation, to complete special requirements and/or an extended period of study. Such a requirement or special opportunity may be made available at the discretion of the Academic Standards Committee. In addition, the Division of Physical Therapy reserves the right to suspend any student who does not perform at an overall level considered satisfactory for patient care.

6. A student who has been suspended may apply to the Admissions Committee of the Division for readmission.

## Curriculum Plan

This curriculum is designed to satisfy the course requirements for admission to the professional portion of the curriculum in Physical Therapy offered by the School of Medicine. The Core Curriculum requirements must be satisfied, and a total of 62 hours is required for admission to the first professional year. This suggested curriculum plan allows latitude in career choice and is basically compatible with various curricula in the arts and sciences.

### First Year

<i>First Sem.</i>	Hr.	<i>Second Sem.</i>	Hr.
Engl. 1 .....	3	Engl. 2 .....	3
Psych. 1** .....	3	Psych. 2** .....	3
Chem. 15** .....	4	Chem. 16** .....	4
P.E. 1 .....	1	P.E. 2 .....	1
Electives* .....	6	Electives* .....	6
	<u>17</u>		<u>17</u>

### Second Year

<i>First Sem.</i>	Hr.	<i>Second Sem.</i>	Hr.
Phys. 1** .....	4	Phys. 2** .....	4
Biol. 1** .....	4	Biol. 2** .....	4
Psych. 141** .....	3	Psych. elect.** .....	3
Stat. 101** .....	3	Electives* .....	6
Electives* .....	3		
	<u>17</u>		<u>17</u>

### Third Year

<i>First Sem.</i>	Hr.	<i>Second Sem.</i>	Hr.
Path. 128 .....	2	Anat. 102 .....	3
Anat. 101 .....	4	Anat. 208 .....	2
Anat. 103 .....	2	Ph. Th. 110 .....	3
Physi. 241 .....	4	Ph. Th. 112 .....	3
Ph. Th. 111 .....	5	Ph. Th. 114 .....	2
Ph.Th. 113 .....	1	Ph. Th. 116 .....	1
		Ph. Th. 118 .....	3
	<u>18</u>		<u>17</u>

#### Fourth Year

<i>First Sem.</i>	Hr.	Second Sem.	Hr.
Ph. Th. 271 .....	4	Ph. Th. 270 .....	3
Ph. Th. 273 .....	3	Ph. Th. 272 .....	2
Ph. Th. 275 .....	3	Ph. Th. 274 .....	4
Ph. Th. 277 .....	3	Ph. Th. 276 .....	3
Ph. Th. 279 .....	4	Ph. Th. 278 .....	5
Ph. Th. 281 .....	1	Ph. Th. 282 .....	1
	<u>18</u>		<u>18</u>

#### Summer

	Hr.
Ph. Th. 290 .....	1-6

\*Suggested electives: Foreign Language (6 hr.); Math. 3, 4; Logic; B. Law 111; Psych. 164, 242, 281, 282; Biol. 266; Fin. 114, 150.

\*\*Courses required for admission to Division of Physical Therapy. Chem. 15 and 16 are recommended because they are basically compatible with other curricula.

### Courses of Instruction in Physical Therapy (Ph. Th.)

Professors M. Barnes (*Director*); Associate Professors Burkart and Crutchfield; Assistant Professors C. Barnes, Meacci, P. J. Parsons, and Petronis.

(Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section.

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal and neuromuscular systems including biomechanics, principles of movement, and analysis of muscle and joint action. Abnormal function due to physical disabilities and pathological disturbances. Students study normal human development and maturation through laboratory sessions involving evaluation and observation of children ranging in age from newborn to 5 years.
111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. PR: Biol. 1, 2; Chem. 15, 16. Lecture-laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy orientation to theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.
112. *Pulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, pathology, and treatment of pulmonary conditions. Laboratory in pulmonary evaluations and respiratory treatment procedures. Lectures and case presentations in medicine and surgery concerning chest and thoracic conditions.
114. *Medicine and Neurology*. II. 3 hr. PR: Ph. Th. 111. Lectures and case presentations in medicine including GI, hematology, endocrinology, dermatology, physiology of aging, and infectious diseases. Orientation to neurology and neurological disorders.
116. *Clinical Education I*. II. 1 hr. (Graded Pass-Fail only.) The physical therapy department, equipment, and procedures. Students observe patient treatment by experienced therapists and perform basic treatment procedures under direct supervision.
117. *Seminar*. I. 1 hr. PR: Ph. Th. 111. Investigation of selected problems and issues.
118. *Basic Therapeutic Exercise*. II. 3 hr. This course includes the application of principles and techniques of traditional forms of anaerobic and aerobic exercises and goniometry. Isotonic, isometric, and isokinetic exercises are presented with an emphasis on the understanding of human cardiopulmonary functions under the stress of motor activity. Laboratory work in the application of basic exercises and pertinent cardiopulmonary stress tests is included.



270. *Organization and Management*. II. 4 hr. PR: Ph. Th. 275, 281. Basic principles and philosophy of management and the organization with emphasis on styles of leadership, group dynamics, theories of motivation, delegation of responsibility and authority, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.
271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures. Basic principles and actual clinical experience with patients offered in electromyography, including nerve conduction and needle insertion studies.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation*. I. 4 hr. PR: Ph. Th. 110, 118. Principles and techniques of performing evaluation testing procedures within the scope of the physical therapist, including manual muscle testing, neurological, ADL, and basic orthopedic evaluations.
274. *Orthopedic Physical Therapy*. II. 3 hr. PR: Ph. Th. 110, 118, 273. Selected lectures and cases in orthopedics. Emphasis on effects and treatment of disease and injury to musculoskeletal and neuromuscular systems. Laboratory practice in orthopedic assessment and procedures, including mobilization techniques.
275. *Professional Literature and Research*. I. 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in the allotted time.
277. *Clinical Teaching*. I. 2 hr. PR: Ph. Th. 273. Emphasis on the physical therapist as a teacher. Students develop skill and techniques in the facilitation of learning, objective writing, and evaluation in both clinic and didactic settings.
278. *Correlative Rehabilitation*. II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise*. I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and functional anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise and methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.
281. *Clinical Education II*. I. 1 hr. (Graded Pass-Fair only.) Continuation of Ph. Th. 116. The student's participation in treatment programs is increased and enlarged to include rehabilitation techniques and basic testing and evaluation procedures.
282. *Clinical Education III*. II. 1 hr. (Graded Pass-Fail only.) Supervised experience in more specialized procedures and testing techniques and inpatient program design.
290. *Clinical Education IV*. S. 1-12 hr. (Graded Pass-Fail only.) Three summer affiliations of six weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health.

# School of Nursing

The faculty believes that man is a physiological, psychological, and social being capable of rational thought and action. Throughout the life span, man systematically progresses through developmental stages and continually strives to meet basic human needs in a uniquely patterned way. Within the context of the sociocultural background, man perceives and responds to stimuli as an integrated whole. Basic human integrity is maintained throughout the process by dynamic continuous interaction with the environment.

Man is a member of innumerable systems within a total society which is organized to meet needs identified by its people with the family being the primary system for meeting social and health needs. To substitute for or assist the family in meeting the health needs of its members, society organizes health care systems. Each individual has the right of access to those resources which will assist in the attainment and maintenance of optimal states of health.

In man, health is a dynamic state of being which constantly fluctuates between varying degrees of illness and wellness. Since man is an integrated being the individual's state of health embodies physiological, psychological, and social dimensions. The optimal state of health which an individual can attain and maintain is unknown but is influenced by genetic endowment, the environment, and the ability to cope with actual or potential stressors.

Nursing shares with other disciplines the overall purpose of the health care system in assisting the client to attain, regain, and retain optimal health. Specifically, the purpose of nursing is to assist the client in the performance of those activities contributing to optimal health (or a peaceful death) that the individual or family would normally initiate and perform unaided if they had the necessary strength, knowledge, and motivation. The practice of nursing embodies the holistic concept of man which is derived from a synthesis of knowledge of the humanities and biological and behavioral sciences. From this conceptual base, the nurse develops and applies technical, interpersonal and intellectual skills in assisting individuals, families, and community groups meet health needs.

The faculty believes that learning is a life-long active process, one which is favored by a climate of personal acceptance of the learners as integrated beings with their own internal motivation, attributes, dignity, and worth. Learning is also a progressive and cumulative experience resulting in changed behavior which becomes useful in subsequent learning situations.

The teaching-learning process includes opportunities for teacher-student interaction in setting goals, selecting and evaluating learning experiences, and in appraising instructional methods and student progress. The process of education takes place in an atmosphere characterized by a democratic spirit in which students and faculty can share learning experiences. Such climate encourages the development of intellectual curiosity, systematic inquiry, the capacity for self-direction and a sense of commitment to continued learning to the end that the individual may become an informed, participating citizen responsible for contributing to the improvement of the profession and society through creative efforts.

## Admission

To qualify for admission to the School of Nursing basic program a candidate must have completed one year of prescribed courses in an accredited college or university. These prescribed courses are: Chemistry, 8 hours; English

Composition, 6 hours; Sociology, 3 hours; Psychology 1, 3 hours; Core subjects, Physical Education and/or electives, 12 hours.

The School of Nursing program consists of one summer session and three academic years. The summer session follows completion of the sophomore year.

A dominant factor in the number of students admitted is the limitation of space. A second factor is the academic record of the applicant. The minimum grade-point average for the West Virginia applicant is 2.5; for out-of-state applicants it is 3.4. West Virginia applicants whose grade-point average falls between 2.3 and 2.5 may petition in writing to the Committee on Admissions for special consideration. Such a petition must clearly state the reason(s) why the applicant should receive special consideration. Petitions should be submitted along with the application to nursing.

Out-of-state residents with a grade-point average between 3.2 and 3.4 may petition in the same manner. *Since West Virginia University is a state university, no more than 10 percent of those admitted may be from out of state.*

The review of applicants takes approximately two to three months. The students are notified by mail after review of all applicants is completed. Two weeks after receipt of the letter of acceptance, the student must send a letter stating acceptance of the position to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance deposit must accompany the letter. This deposit is applied toward the registration fees for the first semester. The deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

The School of Nursing will identify ten in-state alternate candidates and three out-of-state alternate candidates. In the event that a student chooses not to accept a place in the class, an alternate will be chosen by the same review process. Vacancies may occur and will be filled up to the last day to register.

Application for admission to the School of Nursing should be made January 1 of the year the candidate wishes to be admitted. These may be presented in person or mailed directly to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. An application fee of \$10.00, payable to West Virginia University, must accompany the completed application.

## **Transfer Students**

A student from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum, except for courses in Orientation to Nursing. Application for transfer students should be initiated by January 1 in order to allow time for evaluation and processing of credentials. Deadline for receipt of transcripts is March 1. Apply to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506

## **Registered Nurse Students**

The School of Nursing offers graduates of diploma and associate degree nursing programs the opportunity to complete requirements for the baccalaureate degree in nursing at the Morgantown campus and at the Charleston Division of the WVU Medical Center. General education credits earned in any accredited college or university may be applied toward the fulfillment of the degree requirements, if the course work is comparable.

Registered Nurse applicants are admitted directly to the School of Nursing. Acceptance and placement in the program is dependent upon the individual's academic record and upon the number of spaces available in the program. The license to practice nursing and a grade-point average of 2.5, or better, are required.



Fifteen to 18 semester hours, or equivalent, of general education (core) courses are prerequisite to Nursing 99—Basic Concepts of Professional Nursing. Any distribution and/or combination of comparable courses from the following list is appropriate: English 1 and 2, 6 semester hours; Chemistry, 6-8 semester hours; Introductory Psychology, 3 semester hours; Introductory Sociology, 3 semester hours; Anatomy, 3-4 semester hours; Physiology, 3-4 semester hours; Microbiology, 3-4 semester hours; Pharmacology and Toxicology, 3-4 semester hours; Nutrition, 3 semester hours. Additional Core A, B, or elective credit, before enrolling in Nursing 99, is advised. One semester of chemistry is required. The second semester may be waived if the applicant has successfully completed comparable laboratory science courses and meets other science requirements (anatomy, physiology, microbiology, and pharmacology and toxicology). Additional physical and behavioral sciences may be advised on the judgment of the adviser upon review of the student's background.

Upon admission, each student is assigned an adviser who reviews the academic record with the student. A tentative plan of progression evolves from this joint review.

All registered nurse students are required to enroll in Nursing 99. Upon completion of the course, each student, in collaboration with the faculty adviser, will design a plan for completion of the curriculum in accordance with career goals. Graduates of associate degree programs transfer 18 hours of lower-division nursing credit. Graduates of diploma programs must establish 18 hours of lower-division credit by comprehensive challenge examination.

Upon successful completion of Nursing 99, and the establishment of lower-division credit—when applicable—the registered nurse student is eligible for the advanced placement experiences. This experience is a conceptual approach to the challenge of the junior courses. During this experience a diagnostic and prescriptive analysis of the learning needs of the individual is made. This diagnosis forms the basis for the plan of progression through the remainder of the upper-division courses. Upon successful completion of the advanced placement experience the student may choose either to enroll in junior courses or senior courses. The student who is unsuccessful in the advanced placement experience enrolls in the junior courses. All prerequisites for the senior courses must be met before advancement to senior nursing courses.

A minimum of 20 hours of upper-division courses must be taken by enrollment.

Credit for all courses must be established by enrollment or by advanced placement.

Upon receipt of a letter of acceptance into the program, applicants must send a letter stating intent to enroll to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance tuition deposit must accompany the letter. This deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

Requests for information and application forms for the Morgantown campus should be addressed to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

Application forms and information about the program at Charleston may be obtained from the Student Affairs Coordinator, Charleston Division, WVU Medical Center, 3110 MacCorkle Avenue, S.E., Charleston, WV 25304.



## Academic Standards and Graduation Requirements

The student must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) maintain an annual grade-point average of 2.0 or better in all nursing courses; and (3) pass all required courses.

A student who fails to meet the requirements listed above must present to the adviser an acceptable plan for meeting the requirements. This plan must be within the policies and standards set by the Committee on Academic Standards.

All students are required to take the National League for Nursing achievement examinations in the respective areas at the completion of their senior-level experience in Maternity Nursing, Nursing of Children, Medical-Surgical Nursing, Psychiatric Nursing, and Community Health Nursing. The student pays approximately \$10.00 for the entire series.

The degree of Bachelor of Science in Nursing (B.S.N) is conferred upon completion of a minimum of 126 hours.

## Non-Credit Continuing Education Program

The School of Nursing offers a comprehensive state-wide continuing education program for nurses desiring to enhance their contributions to the health care of patients and clients through self development activities. This is made possible through a variety of ongoing workshops, seminars, conferences, training programs, mini-courses, and telelecture courses. The telelecture courses are implemented via a two-way amplified telephone system connecting hospitals throughout the state with the School of Nursing broadcasting station where the courses emanate. All education offerings are approved for Continuing Education Units (CEU) and are a minimum of five contract hours. An individual record of CEUs awarded is maintained by the Division of Off-Campus Credit and Continuing Education and is available to participants upon request. General announcements of educational offerings are published annually with specific program information provided during the interim period. Participant's fees vary according to the educational offering and are assessed at the time of registration.

Announcements of educational offerings may be obtained by contacting the School of Nursing.

## Fees, Expenses, Housing, Transportation

Students registering pay the fees shown in the WVU Medical Center fees charts, plus special fees and deposits as required. Fees are subject to change without notice.

Expenses of students attending WVU vary widely according to course of study and their individual tastes.

Students are expected to provide their own equipment and instruments for the clinical courses.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Telephone 304/293-3706.

For information concerning University and privately owned off-campus housing, write or call the WVU Housing Office, 440 Medical Center Dr., Morgantown, WV 26506. Telephone 304/293-3621.

Some clinical experiences require the student to travel in a multi-county area. Each student is responsible for providing her/his own transportation.

# Curriculum

The conceptual framework of the WVU School of Nursing is based on four concepts. These are man, the nursing process, health, and the environment.

The concept of *man* is basic to nursing. Each man assumes many roles in his life. In nursing these roles are specific. Therefore, the concept *man* refers either to the nurse role and/or the client role. The second and third major concepts are *health* and the nursing *process*. The achievement of health, or a specific goal of health, is the purpose of the nurse providing assistance to the client. The nursing process is the means for achieving this end. The nursing process between nurse and client takes place in and influences a certain *environment*. On the other hand, the *environment* influences the nursing process in many instances. Therefore, the purpose of nursing is to assist the client in the performance of those activities contributing to his health, or in some instances to a comfortable death. These activities would normally be initiated and performed by the client or his family if they had the necessary strength, knowledge and motivation to do so. The conceptual framework, philosophy and terminal objectives of WVU School of Nursing reflect this purpose.

In addition to the four basic concepts there are many subconcepts which are interwoven into the entire curriculum. In our curriculum the successive use of subconcepts will be with increased depth and breadth of knowledge, attitude, and skill.

## FIRST YEAR

	<i>Hr.</i>
Core A .....	3
Chem. 11, 12 .....	8
Engl. 1 & 2 .....	6
P.E. 3 & General Program .....	2
Psych. 1 & Soc.&A. 1 .....	6
Core A or electives .....	6
Nsg. 3 .....	1

---

32

Nsg. 99 (R.N. only) .....6

## SUMMER BETWEEN SECOND & THIRD YEAR

	<i>Hr.</i>
Nsg. 180 .....	3
Nsg. 181 .....	3
	<hr/>
	6

## THIRD YEAR

	<i>Hr.</i>
Nsg. 175 .....	2
Nsg. 182 .....	4
Nsg. 183 .....	4
Nsg. 184 .....	4
Nsg. 185 .....	4
Manag. 216 .....	3
	<hr/>
	21

## SECOND YEAR

	<i>Hr.</i>
Pcol. 160 .....	3
Anat. 101 .....	4
Physi. 101 .....	4
M. Bio. 26 .....	4
Nutrn. 71 .....	3
Nsg. 75 .....	2
Nsg. 80 .....	4
Nsg. 81 .....	2
Nsg. 82 .....	4
Nsg. 83 .....	2

---

32

## EITHER THIRD OR FOURTH YEAR

	<i>Hr.</i>
Core A .....	3
Core B .....	6
(Psych. or Soc.&A.)	
Electives or Core A .....	6
	<hr/>
	15

## FOURTH YEAR

	<i>Hr.</i>
Nsg. 275 .....	3
Nsg. 280 .....	3
Nsg. 281 .....	1
Nsg. 282 .....	2
Nsg. 283 .....	2
Nsg. 284 .....	3
Nsg. 285 .....	3
Nsg. 286 .....	3
	<hr/>
	20

## Master of Science in Nursing (M.S.N)

The master's program of study is designed to prepare the professional nurse as a nurse clinician who has the necessary knowledge, attitudes, and competencies for the practice of nursing in primary health care. The philosophy and conceptual framework of the School of Nursing provide the frame of reference for the four-semester sequence. Through the core nursing and elective courses culminating in a final semester advanced practicum, the student builds the theoretical, scientific, and humanistic base for nursing practice. The emphasis is on the preparation for advanced clinical practice which involves an extensive concentration of research, leadership, and education concepts and experiences. The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, thesis option, and the opportunity to investigate an area of interest in an advanced study course. The pattern and duration for the individual student is determined in consultation with a faculty adviser and is based upon the student's background and goals.

### Admission Requirements

The applicant must meet the admission requirements of the WVU Graduate School.

The applicant must have completed a baccalaureate program in nursing which is accredited by the National League for Nursing. Applicants from unaccredited baccalaureate nursing programs will be considered on an individual basis.

Elementary Statistics is a prerequisite.

The following are required of each applicant:

- a. Personal interview (for admission evaluation and projected program planning).
- b. Evidence of a current professional nursing licensure in at least one state.
- c. A letter of recommendation from each of the following: employer, head of undergraduate nursing school, and a colleague.
- d. Statement of professional goals.

Preference is given to an applicant with:

- a. An undergraduate grade-point average of B (3.0) or better (A = 4.0).
- b. At least one year of professional experience.

### Admission Procedure

Application for admission to the Graduate School must be made on a standard form obtainable from the Office of Admissions and Records, West Virginia University, Morgantown, WV 26506. Application is to be returned to that office. (An applicant must be approved for a graduate program in order to be admitted to the Graduate School.)

A supplementary form will be sent to the applicant to be returned to the Chairperson, Graduate Academic Unit, School of Nursing, West Virginia University, Morgantown, WV 26506.

The Office of Admissions and Records will notify the applicant of the actions taken.

## Degree Requirements Completion of 40 semester credit hours

Achievement of an overall academic average of B (3.0) or better (A = 4.0) in all work attempted in graduate school.

A master's paper is required. Each student has the option of doing a master's paper (3 credit hours) *or* a master's thesis (6 credits).

Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

Removal of all conditions, deficiencies, and incomplete grades.

Students are expected to register for courses with letter grades (A, B, C), with the exception of electives, which the student may opt to take with Satisfactory (S) or Unsatisfactory (U) grades—subject to the approval of the adviser.

## Curriculum Plan for a Master of Science in Nursing Degree

<i>Nursing</i> (21 credits)	<i>Hr.</i>
Nursing 300—Nursing in Primary Health Care I .....	3
Nursing 301—Nursing in Primary Health Care II .....	3
Nursing 302—Nursing in Primary Health Care III .....	3
Nursing 310—Advanced Practice I .....	3
Nursing 311—Advanced Practice II .....	3
Nursing 312—Advanced Practice III .....	3
Nursing 400—Advanced Practice IV .....	3
<i>Research</i> (4 credits)	
Nursing 370—Theories in Nursing .....	2
Nursing 373—Research Process and Methods in Nursing .....	2
<i>Electives</i> (15 credits)	
Nursing 491—Advanced Study .....	1-6
Nursing 497—Thesis .....	3-6
Other Supporting Courses .....	<u>1-15</u>
Total .....	40

### Typical Four-Semester Plan

<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Nursing 300 .....	3	Nursing 301 .....	3
Nursing 310 .....	3	Nursing 311 .....	3
Nursing 370 .....	2	Nursing 373 .....	2
Elective .....	<u>3</u>	Elective .....	<u>3</u>
	11		11
<i>Third Sem.</i>	<i>Hr.</i>	<i>Fourth Sem.</i>	<i>Hr.</i>
Nursing 302 .....	3	Nursing 400 .....	3
Nursing 312 .....	3	Nursing 491 .....	3
Elective .....	<u>3</u>	and/or	
	9	Nursing 497 .....	<u>3-6</u>
			9-12

## Courses of Instruction in Nursing (Nsg.)

3. *Orientation to Nursing*. I. 1 hr. Introduction to philosophy and responsibilities of professional nursing and role of the professional nurse.
75. *Issues of Nursing I*. I, II. 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature.



80. *Concepts of Nursing I. I.* 4 hr. PR: Sophomore standing or consent. (Taken concurrently with Nsg. 81.) Introduces concepts, principles, and theories of nursing practice in relation to the health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.
81. *Practicum I. I.* 2 hr. PR: Sophomore standing or consent. (Taken concurrently with Nsg. 80.) (Graded Pass-Fail only.) Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families.
82. *Concepts of Nursing II. II.* 4 hr. PR: Nsg. 80, 81 or consent. (Taken concurrently with Nsg. 83.) Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.
83. *Practicum II. II.* 2 hr. PR: Nsg. 80, 81 or consent. (Taken concurrently with Nsg. 82.) (Graded Pass-Fail only.) Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families.
99. *Basic Concepts of Professional Nursing. I, II.* S. 6 hr. PR: Nursing licensure. Focuses on man (family) related to life cycle, stress adaptation, deviations from wellness. Clinical application of nursing theory stresses interrelatedness of health problems, scientific inquiry, and interpersonal processes. Students are assisted to identify their career goals.
175. *Issues of Nursing II. I, II.* 2 hr. PR: Nsg. 75 or consent. Issues of nursing practice. Emphasizes related theories and research.
180. *Concepts of Nursing III. S.* 3 hr. PR: Junior standing or consent. (Taken concurrently with Nsg. 181.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Builds on past intellectual and interpersonal arts and psychomotor skills.
181. *Practicum III. S.* 3 hr. PR: Junior standing or consent. (Taken concurrently with Nsg. 180.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individual and/or families with acute health problems. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor nursing skills.
182. *Concepts of Nursing IV. I, II.* 4 hr. PR: Nsg. 181 or consent. (Taken concurrently with Nsg. 183.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Emphasizes problems associated with man's adaptation, regulatory function, nutrition, and cellular growth.
183. *Practicum IV. I, II.* 4 hr. PR: Nsg. 180, 181 or consent. (Taken concurrently with Nsg. 182.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families with acute health problems involving man's adaptation, regulatory function, nutrition, and cellular growth.
184. *Concepts of Nursing V. I, II.* 4 hr. PR: Nsg. 180, 181 or consent. (Taken concurrently with Nsg. 185.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Emphasizes problems associated with man's fluid and electrolyte balance, respiratory and cardiovascular function.
185. *Practicum V. I, II.* 4 hr. PR: Nsg. 180, 181 or consent. (Taken concurrently with Nsg. 184.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families with acute health problems involving man's fluid and electrolyte balance, respiratory and cardiovascular function.
275. *Issues of Nursing III. I.* 3 hr. PR: Nsg. 175 or consent. Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.
280. *Concepts of Nursing VI. I.* 3 hr. PR: Nsg. 281.) Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.

281. *Practicum VI. I.* 1 hr. PR: Senior standing or consent. (Taken concurrently with Nsg. 280.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills.
282. *Concepts of Nursing VII. I.* 2 hr. PR: Senior standing or consent. (Taken concurrently with Nsg. 283.) Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.
283. *Practicum VII. I.* 2 hr. PR: Senior standing or consent. (Taken concurrently with Nsg. 282.) (Graded Pass-Fail only.) Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population.
284. *Concepts of Nursing VIII. II.* 3 hr. PR: Nsg. 280, 281, 282, 283 or consent. (Taken concurrently with Nsg. 285, 286.) The synthesis of a personal and professional philosophy of nursing. Emphasis is on concepts influencing the professional role of the nurse within the health care delivery system.
285. *Practicum VIII. II.* 3 hr. PR: Nsg. 280, 281, 282, 283 or consent. (Taken concurrently with Nsg. 284.) (Graded Pass-Fail only.) Selected experiences of practices of professional nursing within the health care delivery system.
286. *Practicum IX. II.* 3 hr. PR: Nsg. 280, 281, 282, 283 or consent. (Taken concurrently with Nsg. 284.) (Graded Pass-Fail only.) Selected experiences for practice of professional nursing of acute health care problems or critical isolated incidents.
300. *Nursing in Primary Health Care I. I.* 3 hr. (Concurrent enrollment or prerequisite to Nsg. 310.) Analysis and synthesis of concepts in nursing and related sciences for the establishment of the conceptual framework for nursing in primary health care.
301. *Nursing in Primary Health Care II. II.* 3 hr. PR: Nsg. 300, 310. (Concurrent enrollment or prerequisite to Nsg. 311.) Analysis and synthesis of concepts in nursing and related sciences basic to specific strategies for the promotion, maintenance, and restoration of health and prevention of illness with the client's environmental framework.
302. *Nursing in Primary Health Care III. I.* 3 hr. PR: Nsg. 311. (Concurrent enrollment or prerequisite to Nsg. 312.) Analysis and synthesis of concepts in nursing and related sciences basic to the understanding of planned change and the impact in society of nursing practice in primary health care.
310. *Advanced Practice I. I.* 3 hr. PR or Conc.: Nsg. 300. Selected experiences with clients for the continuing development of skills in health assessment and the application of concepts of nursing in primary health care.
311. *Advanced Practice II. II.* 3 hr. PR or Conc.: Nsg. 301. Application of concepts and skills relative to the promotion, maintenance and restoration of health prevention of illness through continuing client relationships in nursing practice in primary health care.
312. *Advanced Practice III. I.* 3 hr. PR or Conc.: Nsg. 302. Application of concepts and skills relative to planned change strategies with clients in nursing practice in primary health care.
370. *Theories in Nursing. I.* 2 hr. Comparative analysis of evolving theories in nursing. Emphasis on the development and testing of nursing theories.
373. *Research Process and Methods in Nursing. II.* 2 hr. An examination of the research process and methods for incorporation into nursing practice.
400. *Advanced Practice IV. I, II.* 3 hr. PR: Nsg. 312. Interdependent practice with interdisciplinary seminars for the synthesis of knowledge, attitudes, and competencies in primary health care.
491. *Advanced Study. I, II.* 1-6 hr. PR: Graduate standing; consent. Investigation of topics relative to current issues in primary health care.
497. *Thesis. I, II.* 3-6 hr.

# School of Pharmacy

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program—including two years of pre-pharmacy.

The objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy.

The pharmacy curriculum consists of three years of professional study preceded by a minimum of two years of study in an accredited College of Arts and Sciences.

The curriculum is designed to provide the student with the scientific and technical knowledge and communication skills required to practice the profession and to inculcate in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions are also available in various government agencies, professional organizations, and industry. Pharmacists are eligible for commissions in the armed forces and the U.S. Public Health Service.

Graduates also may prepare for careers in teaching and research by entering graduate schools for specialization in pharmacy, pharmaceutical chemistry, pharmacy administration, and pharmacology and toxicology. The pharmaceutical industry provides opportunities in a variety of capacities in promotion, distribution, production, and research.

## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy whose object is to promote the interests of pharmaceutical education. All institutional members must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for registration by the West Virginia Board of Pharmacy, the applicant must be a citizen, not less than 21 years of age, and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of a recognized school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate, without further examination, with forty-seven other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.



## Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this and the *WVU Undergraduate Catalog*.

Students preparing for pharmacy study may satisfy the requirements for entrance into the School of Pharmacy by majoring in any art and sciences subject and including in their course selections the following, or their equivalents:

English Composition .....	6 hr.	Chemistry, General .....	8 hr.
College Algebra .....	3 hr.	Chemistry, Organic .....	8 hr.
Trigonometry .....	3 hr.	Physics .....	8 hr.
Principles of Economics .....	6 hr.	Electives* .....	8 hr.
Biology, General .....	8 hr.		
		TOTAL .....	68 hr.

\*Electives must be designed to satisfy University Core Curriculum requirements.

Electives: Core Group A—12 hr.; Core Group B—6 hr.

*University Core Curriculum Group A* includes: Art, English (exclusive of English I and 2), Humanities, Languages, Music, Philosophy, Religious Studies, Selected Multidisciplinary Studies, Speech Communication, and Theatre.

*University Core Curriculum Group B* includes: Forestry 140, Geography, History, Political Science, Psychology, Selected Multidisciplinary Studies, Social Science, Sociology and Anthropology, and Economics (for Pharmacy students, Group B Economics would include economics electives beyond the 6-

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

Admissions are competitive and are based on cumulative academic average and science average achieved in all prior college courses, and a personal interview, and results of the Pharmacy College Admission Test (PCAT).

For admission to the School of Pharmacy, formal application should be made to the Committee on Admissions of the School of Pharmacy as early as possible after January 1, but before April 1, preceding the Fall term (first semester) in which the student is seeking enrollment.

Applicants should write to Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, which will furnish official blanks on which formal application must be made.

A \$10.00 application fee is required and must accompany the application.

Each applicant is expected to deposit \$50.00 before the applicant's name is entered upon the official list of those accepted to the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit fee is forfeited.

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

Complete information may be obtained from the Dean of the School of Pharmacy, or from the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

## Pharmacy College Admission Test

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place



of the test can be obtained from your pre-pharmacy adviser, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 304 East 45th St., New York, NY 10017.

## **Personal Interview**

A personal interview with the Committee on Admissions will be required. Interviews will be held at the WVU Medical Center and will be arranged as far as possible to suit the convenience of the applicant. Interviews are scheduled during February, March, and April. Only applicants with a cumulative and science average above 2.5 will be called for an interview, unless openings are available.

## **Admission to Advanced Standing**

If space is available, students from other accredited schools of pharmacy may be admitted provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses will not be transferred.

## **Student Status and Advancement**

The determination of student status is in the hands of the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of the Dean. In the School of Pharmacy all grades, except W, WU, P, and X, are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average in professional subjects. An F grade, or failure to attain a 2.0 average in any semester, will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second year must petition the Committee on Academic Standards for advancement to the senior year. Any student on probation at the beginning of the second semester second year, or who qualifies for probation during that semester, shall not be eligible for summer clerkships.

Any first-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 14 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

## Special Requirements

All students satisfactorily completing the first professional year must obtain professional liability insurance before being allowed to begin the second professional year. Professional liability insurance will be continuously maintained in effect through completion of the third professional year. Failure to have the liability insurance will result in students not being enrolled in required clinical clerkships.

Students in the first professional year will be required to obtain an Intern Certificate from the West Virginia Board of Pharmacy, and to maintain it through completion of the third professional year.

During the second professional year, students will be informed of their assigned schedules for the third professional year required clinical clerkships. Students will also be informed as to the West Virginia community or communities in which they will reside during these clerkships, the names of their preceptors, and the dates of attendance. The school will provide the student opportunity to participate in choice of assignments, but it reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying clerkship requirements. A maximum of 24 students will be assigned to the summer clerkship period. Only 8 students will be assigned to each required clerkship. In the event of over-subscription to any clerkship period or clerkship rotation, priority will be assigned on the basis of grade-point average attained while a full-time student in the School of Pharmacy.

## Requirements for Degree

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

## Course Changes

A student who desires to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission of such change from the Dean.

# Curriculum

Students who have been enrolled in the School of Pharmacy after August, 1975, must complete the School of Pharmacy Curriculum Plan (or modifications of this plan).

## SCHOOL OF PHARMACY CURRICULUM PLAN

### First Professional Year

<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Bioch. 139—Gen. Biochem .....	4	Phar. 240—Phar. & Ther. I .....	4
Anat. 101—Hum. Anat. ....	3	Phar. 203—Concepts. Phar. II .....	4
Physi. 241—Mech. Body Funct. ....	4	Phar. 241—Fund. Pathophys. ....	3
Phar. 200—Prep. Phar. Pract. ....	2	MBio. 220—Microbiology .....	4
Phar. 201—Concepts Phar. I .....	4	Phar. 228—Phar. Pract. Leg. Env. ....	4
Phar. 227—Phar. Soc. Env. ....	2		
	<u>19</u>		<u>19</u>

### Second Professional Year

<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
Phar. 204—Concepts Phar. III .....	4	Phar. 244—Phar. & Ther. III .....	5
Pcol. 242—Phar. & Ther. II .....	6	Phar. 205—Phar. Pract. ....	4
Phar. 229—Man. Asp. Phar. ....	3	Phar. 230—Prof. Asp. Phar. ....	3
Phar. 243—Chem. Immu. Agts. ....	3	Phar. 260—Princ. Med .....	2
Phar. 207—Intro. to Drug Lit. ....	1	Electives .....	2-4
Electives .....	1-3		
	<u>17-20</u>		<u>16-18</u>

### Third Professional Year

<i>First Session (Summer)</i>	<i>Hr.</i>	<i>Second Session (First Sem.)</i>	<i>Hr.</i>
Phar. 250—Amb. Care Clerk .....	4	Phar. 250, 251, 252, and 253	
Phar. 251—Med. Team Clerk .....	4	(See First Session .....	16
Phar. 252—Inst. Care Clerk .....	4	or	
Phar. 253—Elect. Clerk .....	4	Electives .....	16
	<u>16</u>	or	
		Free Session	

or  
Free Session

<i>Third Session (Second Sem.)</i>	<i>Hr.</i>
Phar. 250, 251, 252, and 253 .....	16
or	
Electives .....	16
or	
Free Session	

# **Graduate Programs**

## **Pharmaceutical Sciences**

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

### **Admission**

Applicants for admission must satisfy the general requirements for admission to the WVU Graduate School. The applicant will possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences. In addition, graduate record examination scores in the verbal and quantitative portions of the examinations will be required from all students, and TOEFL, or similar scores, will be required of foreign students.

### **Academic Standards**

No credits are acceptable toward a graduate degree with a lower than a C.

The graduate student must have a cumulative grade-point average of at least 3.0 in all graduate courses to qualify for the degrees.

### **Master of Science (M.S.)**

The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmacognosy, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceutics, and pharmacokinetics.

#### **Requirements for Master of Science Degree**

To be eligible for the degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis.

Upon completion of the course work and research requirements, and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

### **Doctor of Philosophy (Ph.D.)**

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry and pharmaceuticals/biopharmaceutics/pharmacokinetics.

#### **Requirements for the Ph.D. Degree**

The student's first semester is usually occupied with course work while he or she is under the guidance of an assigned interim committee. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S.



enroute to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student with committee advice may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S. except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted to the Graduate School by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted for candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

## Courses of Instruction in Pharmacy

Professors Choulis, Lim, Luzzi, Malanga, O'Connell, and Wojcik; Associate Professors Baldwin, Brister, Covington, Daniels (part-time), Howard, Jacknowitz, Mauger, Stratford, and Weart; Assistant Professors J. U. Bell (part-time), Deglin, Hoy, Ma, Miller, O'Donnell, Pfeiffer, Proveaux, Riley, Steiner, and Tourville; Instructors Anido, Gill, and Skarzenski; Lecturer Lively; Clinical Associate Professor Lowe; Adjunct Assistant Professors Cunningham and Harper; Clinical Instructors Anderson, Anile, Angotti, Bartsch, D. Bell, Bovenizer, Calemine Chapman, Comm, Corkrean, Crawford, Criss, Doyle, Edgell, Flanagan, Fragale, Fruth, Gastineau, Gianettino, Goodyzoontz, J. Griffith, W. Griffith, Hammond, Hickman, Holmes, Jarvis, F. Judy, S. Judy, Lang, Lewis, Lindsay, Lusk, Malanga, Martin, Merbedone, Meridith, Midcap, Miller, Muha, Neurman, Piercece, Plummer, Plyburn, Prettyman, Ritchie, Scott, Shaw, Smith, Solomon, Stanley, Stout, Swisher, Tonkovich, Toompas, Turk, VanMeter, Vladimery, Wallace, Winters, and Zicafoose.

### Pharmacy (Phar.)

200. *Preparation for Pharmacy Practice. I.* 2 hr. PR: First-year pharmacy student or consent. A study of pharmaceutical calculations, pharmaceutical literature, and an overview of pharmacy practice.
201. *Concepts in Pharmaceutics I. I.* 4 hr. PR: First-year pharmacy student or consent. A discussion of introductory material in the practice of pharmacy and a discussion of the concepts underlying solution dosage forms.
203. *Concepts in Pharmaceutics II. II.* 4 hr. PR: Phar. 201. Basic principles of formulation, *in vitro* evaluation and bioavailability implications of pharmaceutical dosage forms represented by solids and polyphasic systems. Includes small- and large-scale processing of tablets, capsules, suspensions, emulsions and suppositories.
204. *Concepts in Pharmaceutics III. I.* 4 hr. PR: Second-year standing in pharmacy or consent. Special dosage forms, quality control, and drug dosage regimens of pharmaceutical formulations and their conformity with F.D.A. regulations and good manufacturing practices.
205. *Pharmacy Practice. II.* 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.

207. *Introduction to Drug Literature*. I. 1 hr. PR: Second-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.
211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile dosage forms. 2 hr. lec., 3 hr. lab.
212. *Non-Prescription Drugs*. I, 3 hr. PR: Phar. 205; third-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
- 13/300. *Industrial Pharmacy*. I. 4 hr. PR: Phar. 204 or graduate standing. Introduction of the manufacture of dosage forms of their quality control. Structure of the industry and governmental influences. Special attention to new drug evaluation with regard to safety and efficacy.
- 14/314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
- 15/315. *Physical Pharmacy*. II. 3 hr. PR: First-year standing in pharmacy. Designed to illustrate the special application of physicochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. II. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.
227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.
229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I, 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
240. *Pharmacodynamics and Therapeutics I*. II. 4 hr. PR: First-year standing in pharmacy or consent. Consolidation of pharmacologic and medicinal chemical principles underlying mechanisms of drug action and the therapeutic applications of these pharmacodynamic principles in the management of disease states.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
242. *Pharmacodynamics and Therapeutics II*. I. 6 hr. PR: Phar. 240 or consent. Continuation of Phar. 240.

243. *Chemotherapeutic and Immunobiologic Agents*. I. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.
244. *Pharmacodynamics and Therapeutics III*. II. 5 hr. PR: Pcol. 242 or consent. Continuation of Pcol. 242.
250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. Students will participate on a health care team in an inpatient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. Extensive experience will be gained in the practice of pharmacy in institutional centers with emphasis on the pharmacist's relationship with institutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Senior class standing or consent. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Therapeutics*. I. 3 hr. Clinical pharmacological approach to the study of currently used drugs in the proper management of diseases.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.
272. *Medicinal Chemistry*. II. 3 hr. PR: Consent.
276. *Pharmaceutical Quality Control*. I. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present. (*Course will not be offered in 1979-80.*)
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies. (*Course will not be offered in 1979-80.*)
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S. 1-3 hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacognosy, or pharmacy.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
302. *Advanced Pharmaceutics*. I or II. 3 hr. Physiochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.



320. *Drug Regulation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.
321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments. (*Course will not be offered in 1979-80.*)
323. *Economics of the Pharmaceutical Industry*. I or II. 3 hr. History, background, and formation of major drug industries, oligopolistic practices, mergers, combines, costs of research, and production.
340. *Organic Plant Constituents*. I or II. 3 hr. Occurrence, properties, biogenesis, etc. of a number of classes of organic compounds derived from plants. Emphasis on secondary metabolites which contain products of pharmaceutical or medicinal interest. (*Course will not be offered in 1979-80.*)
341. *Isolation of Plant Constituents*. I or II. 3-5 hr. Acquaints the student with techniques used in extraction, separation, and isolation of plant constituents. (*Course will not be offered in 1979-80.*)
370. *The Synthesis of Drugs*. I or II. 4-5 hr. Design of drug molecules on the basis of structure-activity relationships and approaches to synthesis of such compounds. Laboratory to accompany in which representative types of biologically active compounds are prepared.
375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of Phar. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.
377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.
390. *Special Topics*. I, II. 1-4 hr.
391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. presentation and discussion of special topics and research in the pharmaceutical sciences.
396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
491. *Advanced Study*. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
496. *Graduate Seminar*. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of the student's program.
497. *Research*. 1-15 hr.
498. *Thesis*. 2-4 hr. PR: Consent.



# Faculty and Staff

Gene A. Budig, Ed.D., *President.*

Charles E. Andrews, M.D., *Vice President for Health Sciences.*

Raymond M. Haas, D.B.A., *Vice President for Administration.*

Ray Koppelman, Ph.D., *Vice President for Energy Studies, Graduate Programs, and Research.*

Harold J. Shamberger, M.P.A., *Executive Officer.*

Harry W. Ernst, M.S.J., *Assistant to the President for Communications.*

Henry D. Collins, J.S.D., *Assistant to the President*

Marion F. Dearnley, J.D., *Special Assistant to the President and Coordinator of Equal Employment Opportunity and Affirmative Action Affairs.*

## Medical Center

*Charleston Division*, Thomas W. Mou, M.D., *Dean.*

*Dentistry*, W. Robert Biddington, D.D.S., *Dean.*

*Medicine*, John E. Jones, M.D., *Dean.*

*Nursing*, Lorita D. Jenab, Ed.D., *Dean.*

*Pharmacy*, Louis A. Luzzi, Ph.D., *Dean.*

*University Hospital*, Eugene L. Staples, M.H.A., *Administrator.*

## School of Dentistry

John D. Adams, D.D.S. (U. Pitt.), *Professor Emeritus of Fixed Prosthodontics.*

Camillo A. Alberico, D.D.S. (Marquette U.), *Assistant Dean; Professor and Chairman of Endodontics.*

Lester H. Bakos, D.D.S. (WVU), *Assistant Professor of Hospital Dentistry.*

Frank S. Balaban, D.D.S. (WVU), *Assistant Professor of Endodontics.*

Jack H. Baur, Jr., D.D.S. (WVU), *Instructor (part-time) in Endodontics.*

Henry J. Bianco, Jr., D.D.S. (U. Md.), *Professor and Chairman of Prosthodontics.*

W. Robert Biddington, D.D.S. (U. Md.), *Dean; Professor of Endodontics.*

David E. Boaz, D.D.S. (Northwestern U.), *Assistant Professor of Dental Practice Management.*

Joseph J. Bonnell, D.D.S. (U. Pitt.), *Clinical Associate Professor (part-time) of Orthodontics*

Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor and Chairman of Oral Pathology.*

Dale C. Bowers, D.D.S. (Ohio St. U.), *Associate Professor of Oral Diagnosis and Radiology.*

James L. Bramble, D.D.S. (WVU), *Instructor (part-time) in Prosthodontics.*

Thomas C. Cady, LL.M. (U. Tex.), *Lecturer (part-time) in Dental Jurisprudence.*

Anthony L. Camele, D.D.S. (WVU), *Instructor (part-time) in Prosthodontics.*

John L. Campbell, D.D.S. (Ind. U.), *Professor and Chairman of Oral Surgery.*

Minter L. Chapman, D.D.S. (WVU), *Associate Professor (part-time) of Operative Dentistry.*

Myles I. Cogan, D.D.S. (U. Tex.), *Clinical Instructor in Oral Surgery.*

Sharon M. Crowder, D.D.S. (WVU), *Instructor in Prosthodontics.*

Glenn D. Crowe, B.A. (U. N.C.), *Adjunct Assistant Professor of Dental Practice Management.*

Rose-Marie Crystal, M.S. (Columbia U.), *Assistant Professor of Dental Hygiene.*

Dennis W. Dalton, D.D.S. (WVU), *Instructor in Prosthodontics.*

Donald Davidson, D.D.S. (U. Buffalo), *Clinical Associate Professor of Oral Surgery.*

Leo F. DeCounter, D.D.S. (U. Iowa), *Professor of Removable Prosthodontics.*

John Dempsey, D.D.S. (U. Md.), *Assistant Professor (part-time) of Orthodontics.*

Bruce C. Dieterick, D.D.S. (WVU), *Instructor (part-time) in Operative Dentistry.*

Peter H. Fagan, D.D.S. (Loyola U., Chi.), *Clinical Instructor in Hospital Dentistry.*

Sanford J. Fenton, D.D.S. (NYU), *Assistant Professor of Pediatric Dentistry.*

James R. Foor, D.D.S. (WVU), *Assistant Professor of Operative Dentistry.*

Cathryn L. Frere, M.S. (U. So. Calif.), *Assistant Professor of Dental Hygiene.*

Roger L. Frome, D.D.S. (WVU), *Assistant Professor (part-time) of Hospital Dentistry.*

John W. Frye, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry.*

David G. Funderburk, D.D.S. (WVU), *Instructor (part-time) in Endodontics.*

Galvin J. Gaver, D.D.S. (U. Md.), *Professor of Operative Dentistry.*

Stephen C. Gladwin III, D.D.S. (WVU), *Assistant Professor of Operative Dentistry.*

Douglas Gnepp, M.D. (Duke U.), *Instructor (part-time) in Oral Pathology.*

William L. Graham, D.D.S. (U Md.), *Assistant Dean; Professor and Chairman of Oral Diagnosis and Radiology.*

Catherine E. Graves, B.S. (U. Buffalo), *Assistant Professor of Dental Hygiene.*

Robert W. Graves, D.D.S. (WVU), *Associate Professor of Oral Surgery.*

James A. Griffin, D.D.S. (Baylor U.), *Professor of Endodontics.*

Geoffrey A. Gwynn, D.D.S. (WVU), *Assistant Professor (part-time) of Pediatric Dentistry.*

Patricia P. Hagen, D.D.S. (WVU), *Instructor (part-time) in Pediatric Dentistry*

Joseph D. Hancock, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry.*

George W. Harper, D.D.S. (WVU), *Assistant Professor of Removable Prosthodontics.*

Richard I. Hart, D.D.S. (U. Mich.), *Assistant Professor of Operative Dentistry.*

David M. Hickman, D.D.S. (WVU), *Assistant Professor of Dental Practice Management.*

Robert H. Hornbrook, D.D.S. (WVU), *Assistant Professor (part-time) of Periodontics.*

Michael K. Hurst, D.D.S. (WVU), *Instructor in Dental Practice Management.*

Jack G. Hutton, Jr., Ph.D. (U. Conn.), *Visiting Educational Specialist.*

Barbara Ingersoll, Ph.D. (Penn. St. U.), *Assistant Professor of Community Dentistry.*

Charles R. Jackson, D.D.S. (WVU), *Assistant Professor of Operative Dentistry.*

David C. Johnsen, D.D.S. (U. Mich.), *Associate Professor of Pediatric Dentistry.*

Avia Kaplan, M.S. (Boston U.), *Assistant Professor of Dental Hygiene.*

Richard C. Kelly, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry.*

Gordon G. Keyes, D.D.S. (U. Md.), *Assistant Professor of Oral Pathology.*

Darryl R. King, D.D.S. (WVU), *Assistant Professor (part-time) of Oral Surgery.*

Edwin V. Kluth, D.D.S. (Case West. Res. U.), *Associate Professor of Prosthodontics.*

Barbara K. Komives, M.S. (Ohio St. U.), *Chairwoman and Associate Professor of Dental Hygiene.*

Stephen J. Kwiatkowski, D.D.S. (WVU), *Associate Professor of Fixed Prosthodontics.*

Gregory A. Lacy, D.D.S. (WVU), *Instructor in Removable Prosthodontics.*

Raymond M. Ladwig, D.D.S. (WVU), *Associate Professor of Fixed Prosthodontics.*

William R. McCutcheon, D.D.S. (WVU), *Professor and Chairman of Community Dentistry.*

Hubert E. Martin, D.D.S. (U. Pitt.), *Assistant Professor (part-time) of Orthodontics.*

Michael D. Mason, D.D.S. (WVU), *Instructor (part-time) in Operative Dentistry.*

Richard L. Meckstroth, D.D.S. (Loma Linda U., Cal.), *Assistant Professor of Community Dentistry.*

William W. Merow, D.D.S. (U. Md.), *Professor and Chairman of Orthodontics.*

Jerry M. Metheny, D.D.S. (WVU), *Instructor (part-time) in Fixed Prosthodontics.*

Robert N. Moore, D.D.S. (Northwestern U.), *Associate Professor of Orthodontics.*

Wilbur C. Moorman, D.D.S. (Va. Commonwealth U.), *Clinical Professor (part-time) of Hospital Dentistry.*

Donald J. Morrison, D.D.S. (U. Iowa), *Professor and Chairman of Periodontics.*

Robert L. Murphy, M.S. (Cath. U. Am.), *Adjunct Associate Professor of Community Dentistry.*

David A. Nash, D.M.D. (U. Ky.), *Professor and Chairman of Pediatric Dentistry.*

Gary G. Naylor, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry.*

Leslie E. Nicholson, D.D.S. (WVU), *Instructor (part-time) in Pediatric Dentistry*

Linda S. Oliver, D.D.S. (U. Md.), *Instructor in Periodontics.*

Franklin Oliverio, D.D.S. (U. Md.), *Assistant Professor (part-time) of Oral Surgery.*

James E. Overberger, D.D.S. (U. Pitt.), *Associate Dean; Professor of Dental Materials.*

Donald E. Patthoff, D.D.S. (U. Detroit), *Clinical Instructor in Hospital Dentistry.*

Daniel E. Pickle, D.D.S. (U. Ill.), *Assistant Professor of Periodontics.*

Robert G. Pifer, D.D.S. (WVU), *Associate Professor of Oral Diagnosis and Radiology.*

David T. Puderbaugh, D.D.S. (WVU), *Professor and Chairman of Dental Practice Management.*

Vernon Rodeffer, D.D.S. (U. Md.), *Assistant Professor of Operative Dentistry.*

Jack A. Roth, D.D.S. (U. Md.), *Assistant Professor of Removable Prosthodontics.*

Richard A. Salzer, D.M.D. (U. Penn.), *Clinical Assistant Professor of Hospital Dentistry.*

Robert E. Sausen, D.D.S. (U. Minn.), *Professor and Chairman of Operative Dentistry.*

Donald T. Sauter, D.D.S. (Ohio St. U.), *Clinical Instructor (part-time) in Prosthodontics.*

Richard J. Seime, Ph.D. (U. Minn.), *Assistant Professor of Community Dentistry.*

Anne W. Shoaf, B.S. (WVU), *Associate Professor of Dental Hygiene.*

Kim M. Simon, D.D.S. (Va. Commonwealth U.), *Clinical Instructor (part-time) in Hospital Dentistry.*

A. Eddy Skidmore, D.D.S. (WVU), *Associate Professor of Endodontics.*

Homer W. Smith, D.D.S. (WVU), *Associate Professor of Oral Diagnosis.*

Norton P. Smith II, D.D.S. (WVU), *Instructor (part-time) in Fixed Prosthodontics.*

Charles Somers, D.D.S. (Loyola U.), *Professor of Removable Prosthodontics.*

David B. Swartz, D.D.S. (WVU), *Instructor (part-time) in Endodontics.*

Lawrence E. Syner, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Hospital Dentistry*  
 Elizabeth A. Taylor, B.S. (WVU), *Instructor (part-time) in Dental Hygiene*.  
 Andrew J. Tatich, D.D.S. (WVU), *Assistant Professor (part-time) of Orthodontics*.  
 James G. Thomas, D.D.S. (Temple U.), *Professor of Oral Diagnosis and Radiology*.  
 Pamela J. Tsklenis, M.S. (Boston U.), *Associate Professor of Dental Hygiene*.  
 Harold E. Tucker, D.D.S. (Va. Commonwealth U.), *Professor of Fixed Prosthodontics*.  
 Edmond G. VandenBosche, D.D.S. (U. Md.), *Associate Professor of Operative Dentistry*.  
 Alfred VanRiper, D.D.S. (WVU), *Assistant Professor (part-time) of Removable Prosthodontics*.  
 David H. Walker, D.D.S. (WVU), *Assistant Professor of Dental Practice Management, Charleston Division*  
 Robert L. Wanker, D.D.S. (WVU), *Assistant Professor (part-time) of Periodontics*.  
 William A. Weaver, D.D.S. (Ohio St. U.), *Associate Professor of Operative Dentistry*.  
 John T. Welch, D.D.S. (U. Md.), *Professor and Chairman of Hospital Dentistry*.  
 John B. Wilfong, D.D.S. (WVU), *Assistant Professor (part-time) of Orthodontics*.  
 William M. Wine, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Hospital Dentistry*.

## School of Medicine

Ernest L. Abernathy, M.D. (Emory U.), *Clinical Professor of Pathology*.  
 Charles Abraham, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.  
 Francis Adams, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy*.  
 Margaret J. Albrink, M.D. (Yale U.), *Professor of Medicine (Metabolism-Endocrinology)*.  
 Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), *Professor of Pathology*.  
 Martin D. Allan, M.S. (WVU), *Adjunct Instructor in Radiology (Radiation Safety)*.  
 Joel Allen, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Ralph S. Amato, M.D. (U. Neb.), *Associate Professor of Pediatrics*.  
 Federico L. Ampil, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Radiology (Diagnostic)*.  
 Linda Anderson, B.S. (WVU), *Instructor (part-time) in Medical Technology*.  
 Warren T. Anderson, M.D. (Temple U.), *Clinical Associate Professor of Medicine (Cardiology)*.  
 William E. Anderson, M.D. (U. Minn.), *Professor of Medicine; Chairman, Division of Gastroenterology*.  
 Charles E. Andrews, M.D. (Boston U.), *Professor of Medicine (Pulmonary Medicine); Vice President for Health Sciences*.  
 Vicente Anido, M.D. (Havana U.), *Professor Emeritus of Pathology (Clinical)*.  
 Peter N. Arkis, M.A. (Kent St. U.), *Instructor in Surgery (Otolaryngology)*.  
 Jerome Arnett, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine)*.  
 Don L. Arnwine, M.S. (Northwestern U.), *Clinical Associate Professor of Community Medicine*.  
 Steven A. Artz, M.D. (Syracuse U.), *Clinical Associate Professor of Medicine (General Internal)*.  
 Marshall W. Ashby, M.D. (Howard Med. C.), *Assistant Professor of Surgery (General)*.  
 Michael D. Autfield (Edinburgh U.), *Instructor (part-time) in Community Medicine*.  
 Bipinchandra Avashia, M.B.B.S. (Med. C., Baroda), *Clinical Assistant Professor of Medicine (Pulmonary Medicine)*.  
 Michael D. Avington, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology)*.  
 Frank J. Ayd, M.D. (U. Md.), *Clinical Professor of Behavioral Medicine and Psychiatry*.  
 Moutassem Ayoubi, M.D. (Damascus U.), *Clinical Associate Professor of Pediatrics*.  
 Robert W. Azar, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.  
 Albert J. Azzaro, Ph.D. (WVU), *Associate Professor of Neurology and Pharmacology and Toxicology*.  
 Ronald C. Backer, Ph.D. (U. Ariz.), *Adjunct Assistant Professor (part-time) of Pharmacology and Toxicology*.  
 Prakash C. Bangani, M.B.B.S. (Med. C., Indore), *Clinical Assistant Professor of Surgery (Orthopedics)*.  
 Daniel E. Banks, M.D. (Wayne St. U.), *Instructor (part-time) in Medicine (Pulmonary Medicine)*.



Thomas A. J. Baranowski, Ph.D. (U. Kans.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Carl Barger, M.D. (Med. C. Va.), *Clinical Assistant Professor of Radiology (Diagnostic).*

Carolyn E. Barnes, Ph.D. (U. Pitt.), *Assistant Professor of Physical Therapy.*

Marylou Barnes, Ed.D. (WVU), *Professor and Director of Physical Therapy.*

Dilip K. Basu, M.B.B.S. (U. Calcutta), *Clinical Associate Professor of Medicine (General Internal).*

Mildred Bateman, M.D. (Wom. Med. C. Pa.), *Clinical Professor of Behavioral Medicine and Psychiatry.*

John J. Battaglini, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Charles L. Beall, M.D. (WVU), *Assistant Professor (part-time) of Medicine (Hematology/Oncology), Wheeling Division.*

Kamal M. Behnam, M.D. (U. Cairo), *Clinical Associate Professor of Obstetrics and Gynecology.*

Soad Bekheit-Saad, M.D. (U. Cairo), Ph.D. (Queen's U., Belfast), *Associate Professor of Medicine (Cardiology).*

John A. Belis, M.D. (Jeff. Med. C.), *Assistant Professor of Surgery (Urology).*

John U. Bell, Ph.D. (Dalahousie, U., Can.), *Assistant Professor of Pharmacology and Toxicology.*

Ross O. Bell, M.D. (U. Penn.), *Clinical Associate Professor of Pathology.*

William A. Beresford, Ph.D. (Oxford U.), *Professor of Anatomy.*

Stuart K. Bergman, M.D. (Geo. Wash. U.), *Clinical Assistant Professor of Anesthesiology.*

Bruce L. Berry, M.D. (WVU), *Clinical Instructor in Obstetrics and Gynecology.*

Robert Bettinger, M.D. (Med. C. Va.), *Assistant Professor of Anesthesiology.*

James B. Blair, Ph.D. (U. Va.), *Associate Professor of Biochemistry.*

James E. Bland, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Donald M. Blatchley, M.D. (Jeff. Med. C.), *Clinical Professor Emeritus of Medicine.*

Nancie A. Blehschmidt, B.S. (WVU), *Instructor in Medicine (Metabolism-Endocrinology) and Medical Technology.*

Wayne G. Bodenheimer, Ph.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (Otolaryngology).*

Brian Boehlecke, M.D. (SUNY—Buffalo), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine).*

James P. Boland, M.D. (Jeff. Med. C.), *Professor of Surgery; Chief of Surgery, Charleston Division.*

Walter A. Bonney, Jr., M.D. (Columbia U.), *Clinical Professor of Obstetrics and Gynecology.*

Susan P. Borsuk, B.S. (U. Md.), *Clinical Instructor in Physical Therapy.*

Edward M. Bosanac, M.S. (U. Pitt.), *Assistant Professor of Community Medicine.*

Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor of Pathology.*

Mohammed M. Boustany, M.D. (Damascus U.), *Clinical Assistant Professor of Surgery (General).*

K. Douglas Bowers, Jr., M.D. (Jeff. Med. C.), *Clinical Associate Professor of Surgery (Orthopedics).*

John D. Bowles, Cert.PT (D. T. Watson Sch.), *Clinical Instructor in Physical Therapy.*

Carole Brooks Boyd, M.D. (Wayne St. U.), *Associate Professor of Pathology; Acting Chairperson, Clinical Pathology.*

Bert E. Bradford, Jr., M.D. (Wash. U.), *Clinical Professor Emeritus of Surgery.*

Joseph E. Bradley, B.S. (WVU), *Clinical Instructor in Physical Therapy.*

Nancy K. Brallier, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Paul B. Brown, Ph.D. (U. Chi.), *Associate Professor of Physiology and Biophysics.*

James Bryant, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology).*

Dennis L. Burech, M.D. (Ohio St. U.), *Clinical Associate Professor of Pediatrics.*

Sandy L. Burkart, Cert.PT (U. Penn.), *Assistant Professor of Physical Therapy.*

Arnold C. Burke, M.D. (U. Ala.), *Clinical Assistant Professor of Family Practice.*

Simpson S. Burke, M.D. (Harvard U.), *Professor of Anesthesiology.*

Robert G. Burrell, Ph.D. (Ohio St. U.), *Professor of Microbiology.*

Fred R. Butcher, Ph.D. (Ohio St. U.), *Professor of Biochemistry.*

Roy L. Butcher, Ph.D. (Iowa St. U.), *Professor of Obstetrics and Gynecology.*

Andrew K. Butler, M.D. (Rush Med. C.), *Clinical Professor of Radiology.*

Bobby Lee Caldwell, M.D. (Bowman Gray Sch. Med.), *Clinical Associate Professor of Pathology.*



William M. Caldwell, Jr., B.S.E.E. (U. Ky.), *Lecturer in Physiology and Biophysics.*  
Edward J. Callahan, Ph.D. (U. Vt.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
George R. Callender, M.D. (U. Md.), *Clinical Assistant Professor of Surgery (Orthopedics).*  
William J. Canady, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry.*  
James Capage, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
Billy Ray Carlton, Ed.D. (U. Tenn.), *Adjunct Associate Professor of Community Medicine.*  
Stephen W. Carmichael, Ph.D. (Tulane U.), *Associate Professor of Anatomy.*  
Marshall J. Carper, M.D. (Med. C. Va.) *Professor of Family Practice, Charleston Division.*  
James F. Carruth, Ph.D. (U. Ill.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
Donald C. Carter, M.D. (U. Nebr.), *Professor of Behavioral Medicine and Psychiatry.*  
William H. Carter, M.D. (U. Va.), *Clinical Associate Professor of Medicine (General Internal).*  
Walter A. Case, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
Robert M. Castellani, M.D. (Brown U.), *Instructor (part-time) in Community Medicine.*  
Vincent Castranova, Ph.D. (WVU), *Assistant Professor (part-time) of Physiology and Biophysics.*  
Carl H. Cather, Jr., M.D. (Harvard U.), *Clinical Associate Professor of Surgery (Otolaryngology).*  
Carrel M. Caudill, M.D. (Duke U.), *Clinical Professor of Surgery (Neurological).*  
Graciano E. Cendana, M.D. (U. St. Thomas), *Clinical Associate Professor of Pathology.*  
John T. Chambers, M.D. (Case West. Res. U.), *Clinical Professor of Obstetrics and Gynecology.*  
Nyles Charon, Ph.D. (U. Minn.), *Assistant Professor of Microbiology.*  
James M. Chicklo, M.D. (U. Va.), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
Shawn Chillag, M.D. (WVU), *Assistant Professor of Medicine; Chairman, Division of General Internal Medicine; Physician, University Health Service.*  
Shi-Ming (Samuel) Chou, M.D. (Nat'l. Taiwan U.), Ph.D. (U. Wisc.), *Professor of Pathology, Neurology, and Surgery (Neurological).*  
Thomas E. Chvasta, M.D. (U. Pitt.), *Clinical Associate Professor of Medicine (Gastroenterology).*  
Joseph A. Cipic, M.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
Robert N. Clark, M.D. (U. Penn.), *Professor of Surgery (Orthopedics).*  
Thomas S. Clark, M.D. (WVU), *Clinical Instructor in Family Practice.*  
John P. Claude, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*  
David A. Clayman, Ph.D. (U. Vt.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
Robert C. Cody, M.A. (U. Iowa), *Associate Professor of Surgery (Otolaryngology).*  
Brenda K. Colasanti, Ph.D. (WVU), *Associate Professor of Surgery (Ophthalmology), and Pharmacology.*  
Howard D. Colby, Ph.D. (SUNY), *Professor of Physiology and Biophysics.*  
David F. Colvin, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine).*  
Philip E. Comer, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
Janice W. Cone, M.S. (U. Denver), *Associate Professor of Behavioral Medicine and Psychiatry.*  
Francis W. Conley, M.D. (U. Iowa), *Clinical Associate Professor of Medicine (General Internal).*  
Barbara Ann Conway, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*  
Brian Cosmann, M.D. (Queen's U., Belfast), *Assistant Professor of Radiology (Diagnostic).*  
Donald W. Cox, M.D. (Geo. Wash. U.), *Associate Professor of Obstetrics and Gynecology.*  
Charles R. Craig, Ph.D. (U. Wisc.), *Professor of Pharmacology and Toxicology.*  
Paul L. Crawford, Ph.D. (Ohio U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
William D. Crigger, M.D. (Temple U.), *Clinical Assistant Professor of Family Practice.*  
William C. Crittenden, M.D. (Vanderbilt U.), *Clinical Assistant Professor of Pediatrics.*  
Thomas W. Crosby, M.D. (WVU), *Associate Professor of Neurology and Pathology.*  
Michael E. Crouch, M.D. (U. Ark.), *Assistant Professor of Medicine (Rheumatology).*

Carolyn A. Crutchfield, M.S. (WVU), *Professor of Physical Therapy*.  
 James L. Culbertson, Ph.D. (Tulane U.), *Associate Professor of Anatomy*.  
 Larry D. Curnutte, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology*.  
 John C. Cwik, M.D. (Jeff. Med. C.), *Clinical Professor of Anesthesiology*.  
 Robert D'Alessandri, M.D. (NY Med. C.), *Assistant Professor of Medicine (General Internal); Physician, University Health Service*.  
 Paul Davidson, M.D. (U. Minn.), *Clinical Associate Professor of Medicine (Metabolism-Endocrinology)*.  
 Charles M. Davis, Jr., M.D. (U. Penn.), *Associate Professor (part-time) of Surgery (Orthopedics)*.  
 DelRoy R. Davis, M.D. (U. Wash.), *Clinical Professor of Family Practice*.  
 Wirt Lee Davis, M.D. (Med. C. Va.), *Clinical Assistant Professor of Surgery (Orthopedics)*.  
 Samuel J. Deal, Ph.D. (U. Minn.), *Professor of Microbiology*.  
 Stuart M. Deglin, M.D. (Jeff. Med. C.), *Assistant Professor of Medicine (Cardiology)*.  
 Anthony DiBartolomeo, M.D. (WVU), *Associate Professor of Medicine; Chairman, Division of Rheumatology*.  
 Thomas O. Dickey, M.D. (Ohio St. U.), *Clinical Assistant Professor of Family Practice*.  
 Herbert G. Dickie, Jr., M.D. (U. Va.), *Clinical Assistant Professor of Surgery (General)*.  
 Daniel Dickinson, M.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (General)*.  
 John T. Dickinson, M.D. (U. Pitt.), *Clinical Professor of Surgery (Otolaryngology)*.  
 Beverly Diurba, B.S. (U. Pitt.), *Clinical Instructor in Physical Therapy*.  
 Larry A. Dodd, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.  
 E. Richard Dorsey, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Steven Dreyer, Ph.D. (U. N.D.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
 John J. Duda, Ph.D. (WVU), *Adjunct Assistant Professor of Microbiology*.  
 Ralph O. Dunker, Jr., M.D. (Ohio St. U.), *Assistant Professor of Surgery (Neurological)*.  
 Edward T. Dunn, M.D. (U. Va.), *Associate Professor of Family Practice*.  
 Dorothy C. Dunning, Ph.D. (Tufts U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 James Durig, M.D. (WVU), *Clinical Assistant Professor of Surgery (Urology)*.  
 John W. Durkin, Jr., M.D. (U. Vt.), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics and Gynecology, Wheeling Division*.  
 Paul H. Dworkin, M.D. (J. Hopkins U.), *Assistant Professor of Pediatrics*.  
 George W. Easley, M.D. (Med. C. Va.), *Clinical Associate Professor Emeritus of Surgery (General)*.  
 Leonard M. Eckmann, M.D. (NYU), *Clinical Assistant Professor of Family Practice*.  
 Barry A. Edelstein, Ph.D. (Memphis St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Roy A. Edwards, Jr., M.D. (Med. C. Va.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 John S. Ellingson, Ph.D. (U. Mich.), *Associate Professor of Biochemistry*.  
 Thomas E. Ellis, Ph.D. (Baylor U.), *Assistant Professor of Behavioral Medicine and Psychiatry*.  
 William H. Ellsworth, M.D. (Tufts U.), *Clinical Professor of Radiology (Diagnostic)*.  
 M. K. Elyaderani, M.D. (Tehran U.), *Associate Professor of Radiology (Diagnostic)*.  
 Allan L. Engleberg, M.D. (Mt. Sinai Sch. Med.), *Instructor (part-time) in Community Medicine*.  
 Denise L. English, B.S. (U. Pitt.), *Clinical Instructor in Physical Therapy*.  
 Alexander V. Fakadej, M.D. (U. Va.), *Associate Professor of Neurology and Pediatrics*.  
 Okey B. Fawley, M.S.W. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Jeffrey Fedan, Ph.D. (U. Ala.), *Assistant Professor (part-time) of Pharmacology and Toxicology*.  
 Charles W. Fedde, M.D. (U. Colo.), *Clinical Assistant Professor of Surgery (General)*.  
 Roger G. Finch, M.B.Ch.B. (U. Birmingham, Eng.), *Assistant Professor of Medicine (Infectious Diseases)*.  
 Kenneth M. Fink, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 William W. Fleming, Ph.D. (Princeton U.), *Professor and Chairman of Pharmacology and Toxicology*.  
 Edmund B. Flink, M.D., Ph.D. (U. Minn.), *Claude Worthington Benedum Professor of Medicine (Metabolism-Endocrinology) and Behavioral Medicine and Psychiatry*.  
 Richard E. Flood, M.D. (Jeff. Med. C.), *Clinical Professor of Family Practice*.

Phyllis L. Flowers, Ph.D. (U. Mich.), *Assistant Professor of Surgery (Otolaryngology).*  
 John F. Foss, M.D. (U. Iowa), *Assistant Professor of Obstetrics and Gynecology; Physician, University Health Service.*  
 John L. Fox, M.D. (Geo. Wash. U.), *Professor of Surgery (Neurological).*  
 Gunter N. Franz, Ph.D. (U. Wash.), *Associate Professor of Physiology and Biophysics.*  
 David G. Frazer, Ph.D. (WVU), *Associate Professor (part-time) of Physiology and Biophysics.*  
 Richard G. Frederickson, Ph.D. (U. N.D.), *Associate Professor of Anatomy.*  
 John C. Frich, Jr., M.D. (Geo. Wash. U.), *Professor of Radiology; Chairman, Division of Radiation Therapy.*  
 Morton H. Friedman, Ph.D. (U. Tenn.), *Associate Professor of Anatomy.*  
 Roger L. Frome, M.D. (WVU), *Assistant Professor of Surgery (Emergency Room).*  
 James L. Frost, M.D. (J. Hopkins U.), *Professor of Pathology*  
 Nicholas W. Fugo, M.D. (U. Chi.), Ph.D. (St. U. Iowa), *Professor of Obstetrics and Gynecology; Physician, University Health Service.*  
 John L. Fullmer, M.D. (WVU), *Clinical Associate Professor of Family Practice.*  
 Orlando F. Gabriele, M.D. (Yale U.), *Professor and Chairman of Radiology.*  
 R. Brooks Gainer, M.D. (WVU), *Clinical Assistant Professor of Medicine (General Internal).*  
 Hugh Galford, B.S. (D&E C.), *Clinical Assistant Professor of Physical Therapy.*  
 Rama Ganguly, Ph.D. (U. Calcutta), *Assistant Professor of Medicine (Infectious Diseases) and Microbiology.*  
 Dominic J. Gaziano, M.D. (Med. C. Va.), *Clinical Associate Professor of Medicine (General Internal).*  
 Dimitar Georgiev, M.D. (U. St. Klement), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Maria Georgiev, M.D. (Med. Sch. Charles U.), *Assistant Professor of Medicine, Charleston Division.*  
 Vincent F. Gerencser, Ph.D. (U. Ky.), *Associate Professor of Microbiology.*  
 Alfred D. Ghaphery, M.D. (U. Pitt.), *Clinical Associate Professor of Surgery (General).*  
 Robert L. Ghiz, M.D. (Northwestern U.), *Clinical Assistant Professor of Surgery (Orthopedics).*  
 Nicholas Giarritta, M.D. (U. Zurich), *Clinical Assistant Professor of Pathology.*  
 William E. Gilmore, M.D. (U. Wisc.), *Clinical Professor of Surgery (General).*  
 Fernando G. Giustini, M.D. (U. Rome), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Wilbert E. Gladfelter, Ph.D. (U. Penn.), *Associate Professor of Physiology and Biophysics.*  
 Louis M. Glick, M.D. (U. Md.), *Clinical Assistant Professor of Medicine (Gastroenterology).*  
 Douglas R. Gnepp, M.D. (Duke U.), *Assistant Professor of Pathology.*  
 Lewis S. Goldberg, Ph.D. (Am. U.), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
 Rafael A. Gomez, M.D. (Bowman Gray Sch. Med.), *Clinical Instructor in Medicine (General Internal).*  
 Irving J. Goodman, Ph.D. (U. Rochester), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Andrew Goodwin, M.D. (U. Mich.), *Clinical Professor of Radiology (Diagnostic).*  
 Robert W. Graves, D.D.S. (WVU), *Associate Professor of Pharmacology and Toxicology.*  
 Robert Greco, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Francis H. Green, M.D. (Manchester U.), *Assistant Professor (part-time) of Pathology.*  
 Frances Gregory, B.S. (Kans. St. U.), *Clinical Instructor in Physical Therapy.*  
 Frank C. Griswold, M.D. (WVU), *Clinical Assistant Professor of Surgery (General).*  
 George Grubb, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Stephen R. Grubb, M.D. (Med. C. Va.), *Assistant Professor of Medicine, Charleston Division.*  
 Beverly Ann Gryth, V.A. (Augsburg C.), *Clinical Assistant Professor of Physical Therapy.*  
 Robert F. Gustke, M.D. (WVU), *Clinical Assistant Professor of Medicine (Gastroenterology).*  
 Ludwig Gutmann, M.D. (Columbia U.), *Professor and Chairman of Neurology; Professor of Physiology and Biophysics.*  
 Jose A. Gutrecht, M.D. (U. B. Aires), *Professor of Neurology.*  
 Nicholas Hahon, B.S. (D&E C.), *Assistant Professor (part-time) of Pediatrics.*  
 Duane E. Haines, Ph.D. (Mich. St. U.), *Professor of Anatomy.*  
 Charles E. Haislip, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology).*  
 Milton R. Hales, M.D. (U. S.C.), *Professor of Pathology.*  
 David S. Hall, Ph.D. (U. Ky.), *Associate Professor of Community Medicine.*  
 John E. Hall, Ph.D. (Purdue U.), *Professor of Microbiology.*  
 Rodney L. Hall, M.D. (WVU), *Clinical Associate Professor of Anesthesiology.*  
 Sobisca S. Hall, M.D. (U. Chi.), *Clinical Professor Emeritus of Surgery (Otolaryngology).*  
 Trevelyn F. Hall, II, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology).*



William L. Hall, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology)*.  
 John L. Hankinson, M.S. (Ga. Tech.), *Assistant Professor (part-time) of Physiology and Biophysics*.  
 Kerry Harbet, B.S. (WVU), *Instructor in Medical Technology*.  
 Harold H. Harper, M.S.Pharm. (WVU), *Adjunct Assistant Professor of Community Medicine*.  
 Charles L. Harris, Ph.D. (U. Ill.), *Associate Professor of Biochemistry*.  
 Howard H. Harris, M.D. (U. Mo.), *Assistant Professor of Surgery (General)*.  
 Willard S. Harris, M.D. (NYU), *Professor of Medicine; Chairman, Division of Cardiology*.  
 William L. Harris, M.D. (WVU), *Clinical Instructor in Family Practice*.  
 Hollister S. Harrison, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics*.  
 J. Battle Haslam, M.D. (Duke U.), *Clinical Assistant Professor of Radiology*.  
 John M. Hartman, M.D. (U. Md.), *Clinical Associate Professor of Medicine (General Internal)*.  
 Sherman E. Hatfield, M.D. (Med. C. Va.), *Clinical Assistant Professor of Surgery (Otolaryngology)*.  
 Harrison B. Hawley, M.D. (Med. C. Va.), *Assistant Professor of Medicine, Charleston Division*.  
 Richard D. Hayes, M.D. (WVU), *Clinical Instructor of Family Practice*.  
 William G. Hayes, M.D. (Tulane U.), *Clinical Associate Professor of Radiology (Diagnostic)*.  
 George A. Hedge, Ph.D. (Stanford U.), *Professor and Chairman of Physiology and Biophysics*.  
 Elwood H. Heilman, M.D. (U. Okla.), *Clinical Assistant Professor of Surgery (Orthopedics)*.  
 Peter L. Hein, M.D. (Georgetown U.), *Professor of Behavioral Medicine and Psychiatry*.  
 Terring W. Heironimus, III, M.D. (U. Va.), *Professor of Anesthesiology*.  
 Charles A. Heiskell, M.D. (Northwestern U.), *Clinical Assistant Professor of Surgery (General)*.  
 Marta J. Henderson, M.S. (WVU), *Associate Professor of Medical Technology*.  
 Alex M. Hendrick, M.D. (U. London), *Assistant Professor (part-time) of Medicine (Hematology/Oncology)*.  
 David J. Hendrick, M.D. (U. London), *Assistant Professor of Medicine (Pulmonary Medicine)*.  
 William R. Henrick, M.D. (Jeff. Med. C.), *Assistant Professor of Anesthesiology*.  
 Charles D. Hershey, M.D. (U. Mich.), *Clinical Professor Emeritus of Surgery (General)*.  
 John W. Hesen, M.D. (Med. C. Va.), *Assistant Professor (part-time) of Family Practice; Physician (part-time), University Health Service*.  
 Robert D. Hess, M.D. (Med. C. Va.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 Robert W. Hibbard, M.D. (U. Tenn.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 John T. Hicks, M.D. (Columbia U.), *Assistant Professor of Medicine (Rheumatology)*.  
 Rusi A. Hilloowala, Ph.D. (U. Ala.), *Associate Professor of Anatomy*.  
 Henry M. Hills, M.D. (U. Iowa), *Clinical Assistant Professor of Surgery (Orthopedics)*.  
 Bette G. Hinton, M.D. (U. Louisville), *Clinical Assistant Professor of Community Medicine*.  
 David E. Hinton, Ph.D. (U. Miss.), *Associate Professor of Anatomy*.  
 George P. Hlusko, M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
 Florence K. Hoback, M.D. (U. Md.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 William R. Hobbs, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry; Neurology; and Medicine (Behavioral and Ambulatory Medicine)*.  
 Thomas K. Hodous, M.D. (J. Hopkins U.), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine)*.  
 Donald Hofreuter, M.D. (Columbia U.), *Clinical Assistant Professor of Family Practice*.  
 Michael T. Hogan, M.D. (Albany Med. C.), *Associate Professor of Radiology (Diagnostic)*.  
 Charles D. Holland, M.S.H.A. (Northwestern U.), *Associate Professor of Community Medicine; Coordinator, Health Services Research*.  
 Fred Holt, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology)*.  
 Jean D. Holter, B.S. (WVU), *Assistant Professor of Medical Technology*.  
 David L. Hoover, M.D. (U. Md.), *Instructor in Medicine (Infectious Diseases)*.  
 Michael B. Howie, M.D. (Trinity C.), *Associate Professor of Anesthesiology*.  
 Vera Hoylman-Ayoubi, M.D. (WVU), *Clinical Assistant Professor of Pediatrics*.  
 Ellen E. Hrabovsky, M.D. (Vanderbilt U.), *Associate Professor of Surgery (General) and Pediatrics*.  
 Francis Huber, M.D. (U. Tenn.), *Clinical Assistant Professor of Anesthesiology*.

Robert T. Humphries, M.D. (U. Va.), *Clinical Assistant Professor Emeritus of Surgery (Orthopedics)*.

Beatrice R. Hunter, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry*.

David J. Hunter, M.D. (St. Andrews U.), *Associate Professor of Obstetrics and Gynecology*.

Robert M. Hutton, M.D. (WVU), *Instructor in Surgery (Emergency Room)*.

Steven L. Inger, Ph.D. (Bowl. Grn. St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Barbara D. Ingersoll, Ph.D. (Penn St. U.), *Associate Professor of Behavioral Medicine and Psychiatry*.

James M. Irish, Ph.D. (U. Ariz.), *Assistant Professor of Physiology and Biophysics*.

Rabindran Israel, M.B.B.S. (Stanley Med. C.), *Clinical Associate Professor of Pediatrics*.

Harry A. Jackson, M.D. (Med. C. Va.), *Clinical Associate Professor of Medicine (General Internal)*.

John E. Jackson, M.D. (Temple U.), *Clinical Assistant Professor of Family Practice*.

Singanallur N. Jaggannathan, Ph.D. (U. Bombay), *Associate Professor of Pathology and Biochemistry*.

Abnash C. Jain, M.D. (Govt. Med. C., Patiala), *Professor of Medicine (Cardiology)*.

Paul J. Jakubec, M.D. (U. Pitt.), *Clinical Associate Professor of Pediatrics*.

George W. Jaquiss, M.D. (U. Kan.), *Clinical Associate Professor of Surgery (Otolaryngology)*.

Joe N. Jarrett, M.D. (U. Penn.), *Clinical Professor of Family Practice*.

Jesse J. Jenkins, III, M.D. (J. Hopkins U.), *Assistant Professor of Pathology*.

Nancy Jo (Zablotsky) Jennings, M.D. (WVU), *Clinical Associate Professor of Radiology (Diagnostic)*.

Carl E. Johnson, M.D. (Northwestern U.), *Clinical Associate Professor Emeritus of Medicine*.

Jerome G. Johnson, M.D. (U. Minn.), *Clinical Assistant Professor of Surgery (General)*.

Barbara Jones, M.D. (U. Utah), *Professor and Assistant Chairwoman of Pediatrics*.

David S. Jones, M.D. (Loyola U.), Ph.D. (U. Minn.), *Professor Emeritus of Anatomy*.

Douglas Jones, M.D. (Vanderbilt U.), *Assistant Professor of Medicine, Charleston Division*.

John E. Jones, M.D. (U. Utah), *Professor of Medicine (Metabolism-Endocrinology); Dean, School of Medicine*.

Reverdy H. Jones, Jr., M.D. (U. Va.), *Clinical Associate Professor of Medicine*.

Donald B. Kamerer, M.D. (Temple U.), *Clinical Associate Professor of Surgery (Otolaryngology)*.

Stanley J. Kandzari, M.D. (WVU), *Professor of Surgery (Urology)*.

David A. Kappel, M.D. (WVU), *Clinical Associate Professor of Surgery (General)*.

Joseph Kassis, M.D. (Damascus U.), *Clinical Instructor in Surgery (Urology)*.

Sam Katz, Ph.D. (Northwestern U.), *Professor of Biochemistry*.

Frank J. Keefer, M.D. (Geo. Wash. U.), *Clinical Assistant Professor of Obstetrics and Gynecology*.

George M. Kellas, M.D. (U. Penn.), *Clinical Associate Professor of Family Practice*.

Arthur E. Kelley, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.

John F. Kelley, M.D. (McGill U.), *Professor of Behavioral Medicine and Psychiatry and Pediatrics*.

John W. Kennard, M.D. (Bowman Gray Sch. Med.), *Clinical Professor of Radiology (Diagnostic)*.

Roland L. Kennedy, M.D. (Ohio St. U.), *Professor of Anesthesiology*.

Robert D. Kerns, Ph.D. (U. Pitt.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Richard S. Kerr, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology*.

James W. Kessel, M.D. (WVU), *Clinical Assistant Professor of Anesthesiology*.

Henry L. Kettler, M.D. (WVU), *Clinical Assistant Professor of Neurology*.

Gordon S. Keyes, D.D.S. (U. Md.), *Assistant Professor of Pathology*.

Rashida A. Khakoo, M.D. (Makerere U.), *Assistant Professor of Medicine (Infectious Diseases)*.

Mohammed Khalil, M.D. (Osmania U.), *Instructor in Medicine (Gastroenterology)*.

Nadir Khuri, M.D. (Am. U. Beirut), *Clinical Assistant Professor of Surgery (General)*.

Jin-Chul Kim, M.D. (Med. C. Korea), *Assistant Professor of Radiology (Radiation Therapy)*.

Donald L. Kimmel, Ph.D. (U. Mich.), *Professor Emeritus of Anatomy*.

Roger E. King, M.D. (WVU), *Clinical Associate Professor of Surgery (General)*.

Billy E. Kirk, Ph.D. (Ohio St. U.), *Associate Professor of Microbiology*.

George F. Kish, M.D. (Ohio St. U.), *Assistant Professor of Surgery (General)*.

Richard E. Klabunde, Ph.D. (U. Ariz.), *Assistant Professor of Physiology and Biophysics*.

Ricardo Kleiner, M.D. (U. B. Aires), *Clinical Assistant Professor of Pediatrics*.

Rolf F. Keltzien, Ph.D. (U. Wisc.), *Associate Professor of Biochemistry.*

William G. Klingberg, M.D. (Wash. U., St. Lou.), *Professor and Chairman of Pediatrics.*

Ronica M. Kluge, M.D. (U. Fla.), *Associate Professor of Medicine; Chairwoman, Division of Infectious Diseases.*

Richard B. Knapp, M.D. (NY Med. C.), *Professor and Chairman of Anesthesiology.*

Thomas S. Knapp, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Jae Myung Koh, M.D. (Kyung-pook Nat'l. U.), *Clinical Assistant Professor of Radiology.*

Martin J. Kommor, M.D. (U. S.C.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Donald M. Koppel, M.D. (U. Ill.), *Clinical Associate Professor of Medicine (Hematology and Oncology).*

Ray Koppelman, Ph.D. (U. Chi.), *Professor of Biochemistry.*

Miroslav Kovacevich, M.D. (Med. Fac., U. Belgrad), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

John M. Krall, Ph.D. (U. Iowa), *Professor of Community Medicine (Biostatistics).*

Reginald F. Krause, Ph.D. (U. Rochester), M.D. (U. Vt.), *Professor Emeritus of Biochemistry.*

Dharmendra Kumar, M.D. (Patna U.), *Assistant Professor of Radiology (Diagnostic).*

Otto J. Kunst, M.D. (U. Miami), *Assistant Professor of Radiology (Diagnostic).*

Robert E. Kusminsky, M.D. (U. B. Aires), *Assistant Professor of Surgery, Charleston Division.*

Peter P. Ladewig, M.D. (U. Berlin), *Clinical Professor Emeritus of Pathology.*

Chi Whang Lai, Ph.D. (Purdue U.), *Associate Professor of Radiology (Nuclear Medicine).*

Lee D. Lampton, M.D. (U. Calif.), *Clinical Assistant Professor of Radiology (Diagnostic).*

James L. Lane, M.D. (U. Pitt.), *Clinical Associate Professor of Surgery (Urology).*

N. LeRoy Lapp, M.D. (Temple U.), *Professor of Medicine; Chairman, Division of Pulmonary Medicine.*

Norman J. Lass, Ph.D. (Purdue U.), *Associate Professor of Surgery (Otolaryngology), and Anatomy.*

Derrick L. Latos, M.D. (WVU), *Clinical Assistant Professor of Medicine (Nephrology).*

Jo S. Ledwell, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Alberto C. Lee, M.D. (U. S. Tomas, Manila), *Clinical Instructor in Medicine (General Internal).*

Chi Meen Lee, M.D. (Kyungook U.), *Clinical Assistant Professor of Surgery (Urology).*

David P. Lee, M.D. (WVU), *Clinical Associate Professor of Medicine (General Internal).*

Ping Lee, Ph.D. (Duke U.), *Professor of Physiology and Biophysics.*

Johnsey L. Leef, M.D. (WVU), *Clinical Assistant Professor of Radiology.*

Warren D. Leslie, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Pediatrics.*

Robert A. Lewine, M.D. (U. Pitt.), *Clinical Associate Professor of Pediatrics.*

Mary L. Lewis, M.D. (Emory U.), *Clinical Professor of Medicine (General Internal).*

Josiah K. Lilly, III, M.D. (WVU), *Clinical Associate Professor of Anesthesiology.*

Rogelio T. Lim, M.D. (U. S. Tomas, Manila), *Clinical Instructor in Medicine (General Internal).*

Romeo Y. Lim, M.D. (U. Philippines), *Clinical Associate Professor of Surgery (Otolaryngology).*

David J. Lindert, M.D. (U. Ill.), *Clinical Assistant Professor of Surgery (Urology).*

Harry T. Linger, M.D. (Med. C. Va.), *Clinical Instructor in Surgery (Ophthalmology).*

John C. Linton, Ph.D. (Kent St. U.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Luis Loimil, M.D. (U. B. Aires), *Clinical Instructor in Surgery (Orthopedics).*

Betholene F. Love, Ed.D. (WVU), *Professor and Associate Coordinator, Medical Technology.*

Diana Loveless, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*

Richard V. Lynch, M.D. (U. Penn.), *Associate Professor of Medicine (Clinical Immunology); Coordinator, Physicians Assistant Program.*

Robert E. McCafferty, Ph.D. (U. Pitt.), *Professor of Anatomy; Research Associate in Obstetrics and Gynecology.*

Roger L. McCauley, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

D. Verne McConnell, M.D. (Columbia U.), *Clinical Professor of Surgery (General).*

Lewis H. McConnell, M.D. (WVU), *Clinical Assistant Professor of Medicine (General Internal).*

Arch T. McCoy, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery (Urology).*

Leslie McCoy, M.D. (U. Mich.), *Clinical Associate Professor of Community Medicine.*



Bradford McCuskey, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Surgery (Urology)*.

Patricia McCuskey, M.S. (U. Cincin.), *Lecturer (part-time) in Anatomy*.

Robert S. McCuskey, Ph.D. (Case West. Res. U.), *Professor and Chairman of Anatomy*.

Donald E. McDowell, M.D. (Temple U.), *Clinical Professor of Surgery (General)*.

Patricia McIntire, B.A. (Case West. Res. U.), *Clinical Instructor in Physical Therapy*.

Edward N. McIntosh, M.D. (Harvard U.), *Professor of Obstetrics and Gynecology and Medicine (Metabolism-Endocrinology)*.

William J. McKay, M.D. (U. N.M.), *Instructor (part-time) in Community Medicine*.

Richard McKinley, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology*.

Mary McKnight, B.A. (Columbia C.), *Clinical Instructor in Physical Therapy*.

William O. McMillan, Jr., M.D. (Duke U.), *Clinical Professor of Medicine (General Internal)*.

Michael D. McNeer, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Daniel B. MacCallum, M.D. (U. Ky.), *Clinical Assistant Professor of Medicine (General Internal)*.

Jamal E. Mahin, M.D. (Tehran Med. Sch.), *Assistant Professor of Pathology (Clinical Pathology)*.

Daniel A. Mairs, M.D. (Duke U.), *Clinical Associate Professor of Obstetrics and Gynecology*.

Tony C. Majestro, M.D. (WVU), *Clinical Assistant Professor of Surgery (Orthopedics)*.

Indira Majumder, M.D. (S.C.B. Med. C.), *Clinical Instructor in Pediatrics*.

Mary H. Malamisura, B.S. (U. Penn.), *Clinical Instructor in Physical Therapy*.

Paul F. Malone, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology)*.

Robert Marshall, M.D. (Queen's U.), *Clinical Professor of Medicine (Cardiology)*.

James D. Martin, M.D. (Vanderbilt U.), *Professor of Neurology*.

Lawrence Martin, M.D. (WVU), *Instructor in Surgery (Emergency Room), and Medicine (General Internal)*.

Robert B. Martin, Ph.D. (WVU), *Associate Professor of Surgery (Orthopedics)*.

Robert W. Martin, M.D.; (Hahnemann Med. C.), *Instructor in Medicine (Behavioral and Ambulatory Medicine); Physician, University Health Service*.

Orestes A. Martinez, M.D. (Fac. of Med., San Fernando), *Associate Professor of Anesthesiology*.

Stanley S. Masilamani, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine (Gastroenterology)*.

John E. Mateer, M.D. (M. S. Hershey Med. Cen.), *Assistant Professor of Neurology and Medicine; Physician, University Health Service*.

Phillip B. Mathias, M.D. (WVU), *Clinical Associate Professor of Surgery (Otolaryngology)*.

Michael G. Mawhinney, Ph.D. (WVU), *Associate Professor of Surgery (Urology) and Pharmacology and Toxicology*.

Ward W. Maxson, M.D. (U. Mich.), *Clinical Associate Professor of Obstetrics and Gynecology*.

Victor E. Mazzocco, M.D. (WVU), *Clinical Assistant Professor of Medicine (Metabolism-Endocrinology)*.

Charles E. Mecci, M.S. (Boston U.), *Assistant Professor of Physical Therapy*.

Elmaslias Menchavez, M.D. (Cebu Inst. Med.), *Clinical Assistant Professor of Pediatrics*.

Catalino B. Mendoza, Jr., M.D. (Manila Centr. U.), *Clinical Associate Professor of Surgery (General)*.

Henry F. Mengoli, Ph.D. (Cath. U. Am.), *Associate Professor of Microbiology*.

James A. Merchant, M.D. (U. Iowa), *Associate Professor (part-time) of Medicine (Pulmonary Medicine) and Community Medicine*.

D. Franklin Milam, M.D. (U. Penn.), *Professor of Surgery; Chairman, Division of Urology*.

Philip R. Miles, Ph.D. (WVU), *Associate Professor (part-time) of Physiology and Biophysics*.

Ronald J. Millecchia, Ph.D. (Rockefeller U.), *Associate Professor of Physiology and Biophysics*.

Lawrence S. Miller, M.D. (U. Va.), *Clinical Professor of Surgery (Orthopedics)*.

Michael Miller, Ph.D. (Penn St. U.), *Assistant Professor of Biochemistry*.

Phyllis M. Miller, M.S.W. (Purdue U.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.

Jovan Milutinovich, M.D. (Med. Fac. Zagreb), *Associate Professor of Medicine; Chairman, Division of Nephrology*.

Barbara I. Moidel, M.A. (W. Mich. U.), *Clinical Assistant Professor of Surgery (Otolaryngology)*.

Dane W. Moore, Jr., M.S. (WVU), *Professor of Medical Technology*.

Richard A. Moran, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy.*  
 Walter H. Moran, M.D. (Harvard U.), *Professor of Surgery and Physiology and Biophysics; Director of Emergency Room.*  
 Michael A. Morehead, M.D. (WVU), *Clinical Assistant Professor of Neurology.*  
 Barbara U. Morgan, M.D. (WVU), *Clinical Assistant Professor of Neurology and Pediatrics.*  
 David Z. Morgan, M.D. (Med. C. Va.), *Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Associate Dean, School of Medicine (Student Affairs).*  
 Edwin J. Morgan, M.D. (U. Pitt.), *Associate Professor of Medicine (Behavioral and Ambulatory Medicine) and Behavioral Medicine and Psychiatry; Medical Director, University Health Service.*  
 William C. Morgan, M.D. (U. Va.), *Clinical Associate Professor of Surgery (Otolaryngology).*  
 Winfield S. Morgan, M.D. (Temple U.), *Professor of Pathology.*  
 Joseph B. Moriarty, Ph.D. (Fordham U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Joseph T. Morris, M.D. (Hahnemann Med. C.), *Clinical Associate Professor of Pediatrics.*  
 Thomas W. Mou, M.D. (U. Rochester), *Professor of Community Medicine and Medicine (General Internal); Dean, Charleston Division.*  
 Carlos Moya-Silva, M.D. (Nat'l. U. Colombia), *Assistant Professor of Pathology (Clinical Pathology).*  
 Martha K. Mullett, M.D. (WVU), *Associate Professor of Pediatrics.*  
 Alfredo Munoz, M.D. (Cen. U., Ecuador), *Clinical Assistant Professor of Pediatrics.*  
 David Z. Myerberg, M.D. (Columbia C.), *Assistant Professor of Pediatrics.*  
 Ganesan Nagarajan, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 David M. Nally, M.D. (WVU), *Assistant Professor of Surgery (Emergency Room).*  
 Carlos A. Naranjo, M.D. (Med. C., Ecuador), *Clinical Assistant Professor of Surgery (Urology).*  
 Arsenio P. Navvaro, M.D. (Far Eastern U.), *Instructor in Radiology (Diagnostic).*  
 LaRee D. Naviaux-D'Abreo, Ph.D. (Duquesne U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 William A. Neal, M.D. (WVU), *Associate Professor of Pediatrics; Chairman, Division of Pediatric-Cardiology.*  
 Ralph H. Nestman, M.D. (Ind. U.), *Clinical Associate Professor of Medicine (General Internal).*  
 Benjamin Newman, M.D. (U. Beirut), *Clinical Associate Professor of Family Practice.*  
 Roger P. Nichols, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
 G. Robert Nugent, M.D. (U. Cincin.), *Professor of Surgery; Chairman, Division of Neurological Surgery.*  
 William E. Nunnery, M.D. (U. Kans.), *Clinical Assistant Professor of Surgery (Urology).*  
 Stephen A. Olenchok, Ph.D. (WVU), *Assistant Professor (part-time) of Microbiology.*  
 Anthony J. Oliverio, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
 R. Wade Ortel, M.D. (U. Md.), *Professor of Medicine (General Internal), Wheeling Division.*  
 Carl E. Ortmeier, Ph.D. (Iowa St.U.), *Assistant Professor (part-time) of Community Medicine.*  
 Enayotollah Osanloo, M.D. (Tehran U.), *Assistant Professor of Medicine (Nephrology).*  
 James O'Toole, M.D. (St. Lou. U.), *Professor of Medicine (Cardiology).*  
 Dennis O. Overman, Ph.D. (U. Mich.), *Associate Professor of Anatomy.*  
 Albert Paine, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery (Otolaryngology).*  
 Undong Pak, M.D. (Kyungpook U.), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Brojesh C. Pakrashi, M.D. (U. Calcutta), *Associate Professor of Medicine (Cardiology).*  
 Antonio Palladino, M.D. (U. Naples), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Louis C. Palmer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*  
 Joseph V. Panepinto, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Ruth A. Panepinto, Ph.D. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
 David K. Parkinson, M.B.B.Ch. (Oxford U.), *Associate Professor of Community Medicine.*

Nolan C. Parsons, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology)*.  
 Paul Parsons, B.S. (SUNY), *Assistant Professor of Physical Therapy*.  
 Richard S. Pataki, M.D. (N.Y. Med. C.), *Clinical Assistant Professor of Pathology*.  
 Robert Patchell, M.D. (U. Toronto), *Clinical Professor of Obstetrics and Gynecology*.  
 Mahendrakumbar Patel, M.D. (Med. C. Baroda), *Clinical Assistant Professor of Medicine (Pulmonary Medicine)*.  
 Denzil Patton, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
 Thompson E. Percy, M.D. (WVU), *Instructor in Obstetrics and Gynecology, Charleston Division*.  
 David J. Pearson, Ph.D. (Victoria U.), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine)*.  
 Richard J. Pearson, M.D. (Cambridge U.), *Professor and Chairman of Community Medicine; Professor of Family Practice*.  
 Phillip J. Peters, M.D. (WVU), *Assistant Professor of Medicine (Metabolism-Endocrinology)*.  
 John J. Petronis, B.A. (E Stroudsburg St. C.), *Associate Professor of Physical Therapy*.  
 Carl Pfirman, B.S. (Penn St. U.), *Clinical Instructor in Physical Therapy*.  
 Alfred K. Pfister, M.D. (Ind. U.), *Clinical Professor of Medicine (General Internal)*.  
 Ruth M. (Trotter) Phillips, M.D. (J. Hopkins U.), *Associate Professor of Pediatrics*.  
 Richard E. Piccirillo, M.D. (WVU), *Assistant Professor (part-time) of Medicine (Pulmonary Medicine)*.  
 George E. Pickett, M.D. (McGill U.), *Clinical Professor of Community Medicine*.  
 Justus C. Pickett, M.D. (Case West. Res. U.), *Clinical Professor Emeritus of Surgery (Orthopedics)*.  
 Carlin A. Pinkstaff, Ph.D. (Emory U.), *Associate Professor of Anatomy*.  
 Betty S. Pittman, M.A. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Arthur L. Poffenbarger, M.D. (U. Md.), *Clinical Professor of Neurology*.  
 Robert B. Point, M.D. (U. Va.), *Clinical Associate Professor of Medicine (Dermatology)*.  
 W. Warren Point, M.D. (Harvard U.), *Professor and Assistant Chairman of Medicine; Chief of Medicine, Charleston Division*.  
 Herbert H. Pomerance, M.D. (Columbia U.), *Professor and Chief of Pediatrics, Charleston Division*.  
 Thomas R. Poole, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology*.  
 Robert S. Pope, Ph.D. (U. N.D.), *Associate Professor of Anatomy*.  
 Robert S. Pore, Ph.D. (UCLA), *Associate Professor of Microbiology*.  
 Patricia B. Porterfield, M.S.W. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry*.  
 Alexius T. Portz, Ph.D. (U. Mich.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Thomas G. Potterfield, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics*.  
 Lee H. Pratt, M.D. (WVU), *Clinical Assistant Professor of Neurology*.  
 Jack Pushkin, M.D. (WVU), *Clinical Assistant Professor of Surgery (Orthopedics)*.  
 Willard Pushkin, M.D. (Med. C. Va.), *Clinical Professor Emeritus of Medicine*.  
 Eugene A. Quarrick, Ph.D. (Syracuse U.), *Professor of Behavioral Medicine and Psychiatry*.  
 Cedric A. Quick, M.D. (U. Col.—Cardiff), *Professor of Surgery (Otolaryngology)*.  
 Gale W. Raifer, Ph.D. (U. Wash.), *Professor of Biochemistry*.  
 Peter C. Raich, M.D. (U. Wisc.), *Professor of Medicine; Chairman, Division of Hematology/Oncology*.  
 Arunthathie Rajaratnam, M.B.B.S. (U. Ceylon), *Assistant Professor of Anesthesiology*.  
 Vadrevu K. Raju, M.B.B.S. (Andhira Med. C.), *Assistant Professor of Surgery (Ophthalmology)*.  
 Mary Rambo, B.S. (U. Pitt.), *Clinical Instructor in Physical Therapy*.  
 Mark J. Reazor, Ph.D. (J. Hopkins U.), *Assistant Professor of Pharmacology and Toxicology*.  
 Joseph B. Reed, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
 Robert J. Reed, M.D. (U. Penn.), *Clinical Assistant Professor of Surgery (General)*.  
 Robert B. Reger, M.S. (WVU), *Instructor (part-time) in Community Medicine*.  
 Charles E. Reier, M.D. (Jeff. Med. C.), *Clinical Professor of Anesthesiology*.  
 Frank D. Reilly, Ph.D. (U. Cincin.), *Assistant Professor of Anatomy*.  
 Martin D. Reiter, M.D. (Jeff. Med. C.), *Clinical Professor of Medicine (General Internal)*.  
 Ole W. Renick, M.D. (Med. C. Va.), *Clinical Assistant Professor of Surgery (Otolaryngology)*.  
 Joseph J. Renn, III, M.D. (WVU), *Clinical Associate Professor of Medicine (Pulmonary Medicine)*.  
 Harold Resnick, Ph.D. (U. Iowa), *Professor (part-time) of Biochemistry*.



David Revell, M.D. (U. Vt.), *Clinical Instructor in Behavioral Medicine and Psychiatry*.  
 William C. Revercomb, M.D. (Columbia U.), *Clinical Associate Professor of Medicine (General Internal)*.  
 Randall W. Reyer, Ph.D. (Yale U.), *Professor of Anatomy*.  
 Joung Wye Rhee, M.D. (Seoul Nat'l. U.), *Clinical Assistant Professor of Pediatrics*.  
 Joe W. Rhudy, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
 Thomas L. Ritz, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
 Robert L. Robinson, Ph.D. (U. Kans.), *Professor of Pharmacology and Toxicology*.  
 Joan Robison, Ph.D. (U. Ga.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
 Satyabhashi P. Rochlani, M.B.B.S. (U. Madras), *Associate Professor of Pathology*.  
 Jeanne A. Rodman, M.D. (U. Iowa), *Clinical Associate Professor of Anesthesiology*.  
 Nathaniel F. Rodman, M.D. (U. Penn.), *Professor and Chairman of Pathology*.  
 Dorris P. Rogers, Ph.D. (U. Tex.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 John S. Rogers, M.D. (Geo. Wash. U.), *Assistant Professor of Medicine (Hematology/Oncology)*.  
 Carl J. Roncaglione, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery (Orthopedics)*.  
 Jean D. Ross, M.D. (Harvard U.), *Associate Professor of Pediatrics, Charleston Division*.  
 William Rossman, M.D. (Ind. U.), *Clinical Instructor in Behavioral Medicine and Psychiatry*.  
 Alex J. Sabo, M.D. (WVU), *Clinical Assistant Professor of Pathology*.  
 Robert S. Salisbury, M.D. (WVU), *Clinical Assistant Professor of Pathology*.  
 Eugene G. Sander, Ph.D. (Cornell U.), *Professor and Chairman of Biochemistry*.  
 Ujjal Sandhu, M.B.B.S. (Calcutta Nat'l. Med. Inst.), *Clinical Assistant Professor of Obstetrics and Gynecology*.  
 Michael A. Santer, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology)*.  
 Paul D. Saville, M.D. (St. Geo. Med. Sch., Lond.), *Clinical Professor of Medicine (Rheumatology)*.  
 Ronald A. Savrin, M.D. (SUNY—Upstate), *Assistant Professor of Surgery (General)*.  
 Martin W. Schein, Sc.D. (J. Hopkins U.), *Clinical Professor of Behavioral Medicine and Psychiatry*.  
 Merle S. Scherr, M.D. (U. Md.), *Clinical Associate Professor of Medicine (General Internal)*.  
 Gunter Schwarzbart, M.D. (U. Basel), *Clinical Associate Professor of Surgery (General)*.  
 Ronald R. Scobbo, M.D. (WVU), *Associate Professor of Medicine (General Internal) and Behavioral Medicine and Psychiatry*.  
 Douglas Seaton, M.B.Ch.B. (Liverpool U.), *Adjunct Instructor in Medicine (Pulmonary Medicine)*.  
 Narinder N. Sehgal, M.B.B.S. (Panjab U., India), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics-Gynecology, Charleston Division*.  
 Richard J. Seime, Ph.D. (U. Minn.), *Associate Professor of Behavioral Medicine and Psychiatry*.  
 Harold Selinger, M.D. (N.Y. St. U. C. Med.), *Clinical Professor of Medicine (General Internal)*.  
 James K. Sexton, M.D. (Wk. Forest U.), *Clinical Associate Professor of Radiology (Diagnostic)*.  
 Tahir Shafi, M.B.B.S. (Nuhtar Med. C.), *Clinical Assistant Professor of Medicine (Nephrology)*.  
 Shilbala (Sheila) Shah, M.D. (Seth G. S. Med. C.), *Associate Professor of Pathology*.  
 Stanley R. Shane, M.D. (U. Kans.), *Professor of Medicine; Chairman, Division of Metabolism and Endocrinology; Associate Chairman, Department of Medicine*.  
 Roy C. Shannon, M.D. (U. Iowa), *Assistant Professor of Medicine (General Internal)*.  
 Anne W. Sharpe, B.S. (WVU), *Assistant Professor of Medical Technology*.  
 George A. Shawkey, M.D. (Northwestern U.), *Clinical Associate Professor of Pediatrics*.  
 Thomas K. Shehan, D.V.M. (Ohio St. U.), *Associate Professor of Pathology; Division Coordinator, Comparative Pathology (Animal Quarters)*.  
 John P. Shemo, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Lauralee Sherwood, D.V.M. (Mich. St. U.), *Associate Professor of Physiology and Biophysics*.  
 Earle Shoub, B.S. (Poly. Inst. Brooklyn), *Associate Professor (part-time) of Anesthesiology*.  
 Jeffrey S. Shultz, M.D. (WVU), *Associate Professor of Medicine; Chief of Medicine, Wheeling Division*.  
 Richard H. Sibley, M.D. (WVU), *Clinical Assistant Professor of Surgery (Orthopedics)*.  
 Leslie D. Simmons, M.D. (Tulane U.), *Clinical Professor of Family Practice*.  
 William P. Sinclair, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice*.  
 Wilbur Z. Sine, M.D. (WVU), *Clinical Assistant Professor of Family Practice and Behavioral Medicine and Psychiatry*.  
 Purendra P. Sinha, M.B.B.S. (Patna U.), *Assistant Professor of Radiology (Radiation Therap)*.  
 Joseph T. Skaggs, M.D. (U. Louisville), *Clinical Professor of Medicine (General Internal)*.  
 John M. Slack, Ph.D. (U. Minn.), *Professor Emeritus of Microbiology*.

- Stephen T. Slack, Ph.D. (Penn St. U.), *Assistant Professor of Radiology; Chief of Radiation Safety.*
- Clark K. Sleeth, M.D. (U. Chi.), *Professor Emeritus of Medicine and Family Practice.*
- David H. Smith, M.D. (U. Alberta), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*
- David J. Smith, Ph.D. (WVU), *Associate Professor of Anesthesiology and Pharmacology and Toxicology.*
- James T. Smith, M.D. (U. Kans.), *Clinical Assistant Professor of Radiology (Diagnostic).*
- K. Madison Smith, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*
- Larry C. Smith, M.D. (Med. C. Va.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*
- Ralph S. Smith, M.D. (Northwestern U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*
- Robert Leslie Smith, M.D. (U. Ill.), *Associate Professor of Community Medicine and Assistant Dean, School of Medicine (Continuing Education).*
- George E. Snider, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*
- Irvin S. Snyder, Ph.D. (U. Kans.), *Professor and Chairman of Microbiology.*
- Seung Seek Sohn, M.D. (Yonsei U.), *Clinical Assistant Professor of Pathology.*
- Irvin M. Sopher, M.D. (U. Md.), *Clinical Professor of Pathology.*
- William G. Sorenson, Ph.D. (U. Tex.), *Assistant Professor (part-time) of Microbiology.*
- Suzanne S. Souther, B.S. (WVU), *Clinical Instructor in Physical Therapy.*
- James T. Spencer, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Surgery (Otolaryngology).*
- Wayne Spiggle, M.D. (Med. C. Va.), *Clinical Instructor in Medicine (Hematology/Oncology).*
- Frederick T. Sporck, M.D. (WVU), *Assistant Professor of Surgery (Otolaryngology).*
- Philip M. Sprinkle, M.D. (U. Va.), *Professor of Surgery; Chairman, Division of Otolaryngology.*
- David J. Srebalus, Ed.D. (Ind. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*
- Charles Staab, M.D. (U. Pitt.), *Clinical Assistant Professor of Pediatrics.*
- Edwin P. Stabins, M.D. (Cornell U.), *Clinical Professor of Pediatrics.*
- Eugene L. Staples, M.H.A. (U. Minn.), *Clinical Professor of Community Medicine and Behavioral Medicine and Psychiatry; Administrator, University Hospital.*
- Ellen F. Starkey, M.S. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*
- Larry J. Stemple, M.D. (WVU), *Clinical Assistant Professor of Surgery (Orthopedics).*
- Margaret Stemple, M.D. (Rush Med. C.), *Clinical Assistant Professor of Family Practice.*
- Roy J. Stevens, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*
- James M. Stevenson, M.D. (WVU), *Associate Professor and Acting Chairman of Behavioral Medicine and Psychiatry; Chief of Behavioral Medicine and Psychiatry, Charleston Division.*
- J. Clifford Stickney, Ph.D. (U. Minn.), *Professor Emeritus of Physiology and Biophysics.*
- Robert E. Stitzel, Ph.D. (U. Minn.), *Professor and Acting Chairman of Pharmacology and Toxicology.*
- David A. Stoll, M.D. (U. Iowa), *Clinical Instructor in Surgery (Orthopedics).*
- Robert E. Stone, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology.*
- Charles W. Stratton, M.D. (U. Vt.), *Assistant Professor of Medicine (Infectious Diseases), Charleston Division.*
- Ronald K. Stupar, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*
- Balusamy Subbiah, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine (General Internal).*
- Vadakkengeri Subramanian, M.B.B.S. (Madurai Med. C.), *Assistant Professor of Medicine (Hematology/Oncology).*
- Karen A. Sullivan, Ph.D. (Duke U.), *Assistant Professor of Pathology (Clinical Pathology).*
- Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), *Instructor in Pediatrics.*
- Lois V. Svoboda, M.D. (U. Chi.), *Assistant Professor (part-time) of Family Practice; Physician, University Health Service.*
- William B. Svoboda, M.D. (U. Chi.), *Associate Professor of Neurology and Pediatrics.*
- Danna C. Swan, M.D. (WVU), *Assistant Professor of Medicine (Behavioral and Ambulatory); Physician, University Health Service.*
- Zoltan Szalontay, M.D. (U. Zagreb), *Clinical Associate Professor of Radiology.*
- Ernesto R. Tanguilig, M.D. (U. Philippines), *Clinical Professor of Radiology.*
- Thomas J. Tarnay, M.D. (Columbia U.), *Assistant Professor of Surgery (General).*
- Geoffrey Taylor, M.D. (U. Manchester), *Professor (part-time) of Medicine (Pulmonary Medicine).*
- Mary Ellen Tekieli, Ph.D. (U. Okla.), *Clinical Associate Professor of Surgery (Otolaryngology).*

Barbara L. Tenney, M.D. (Jeff. Med. C.), *Associate Professor of Pediatrics.*  
 Erdogan Tercan, M.D. (Ankara U.), *Clinical Associate Professor of Anesthesiology.*  
 Marilyn M. Thatcher, B.A. (U. Tenn.), *Clinical Instructor in Pediatrics.*  
 John A. Thomas, Ph.D. (St. U. Iowa), *Professor of Pharmacology and Toxicology; Associate Dean, School of Medicine (Administration).*  
 Herbert A. Thompson, Ph.D. (U. Kans.), *Assistant Professor of Microbiology.*  
 Robert C. Thompson, Jr., M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Lawrence B. Thrush, M.D. (U. Penn.), *Clinical Instructor in Surgery (General).*  
 Robert Tomhave, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Joseph B. Touma, M.D. (Damascus U.), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
 Judith A. Traister, Cert. PT (D. T. Watson Sch. of Psy.), *Clinical Instructor in Physical Therapy.*  
 Donald C. Trapp, M.D. (Temple U.), *Clinical Associate Professor of Surgery (Urology).*  
 John W. Traubert, M.D. (Ohio St. U.), *Professor and Chairman of Family Practice.*  
 John W. Trenton, M.D. (U. Penn.), *Clinical Professor of Surgery (General).*  
 Robert R. Trotter, M.D. (Temple U.), *Professor of Surgery; Chairman, Division of Ophthalmology.*  
 George P. Tryfiates, Ph.D. (Rutgers U.), *Associate Professor of Biochemistry.*  
 Pat A. Tuckwiller, M.D. (U. Chi.), *Clinical Professor Emeritus of Medicine.*  
 Christopher C. Tully, M.D. (Med. C. Va.), *Professor of Family Practice; Chief of Family Practice, Charleston Division.*  
 Irma H. Ullrich, M.D. (U. Minn.), *Associate Professor of Medicine (Metabolism-Endocrinology).*  
 Daniel D. Upthegrove, M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Pedro R. Urquilla, M.D. (U. El. Salv.), *Associate Professor of Pharmacology and Toxicology.*  
 Isidro P. Uy, M.D. (U. Santo Tomas), *Clinical Instructor in Pediatrics.*  
 Knox Van Dyke, Ph.D. (St. Lou. U.), *Professor of Pharmacology and Toxicology.*  
 Edward J. VanLiere, M.D. (Harvard U.), Ph.D. (U. Chi.), *Professor Emeritus of Physiology and Biophysics.*  
 Louise E. Van Riper, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Angel Vasquez-Lopez, M.D. (U. P. Rico), *Professor of Family Practice and Pediatrics.*  
 Robert W. Veltri, Ph.D. (WVU), *Professor of Microbiology and Surgery (Otolaryngology).*  
 Purushattom L. Verma, M.D. (Nagpur U.), *Clinical Instructor in Pediatrics.*  
 Peter L. Villani, M.D. (WVU), *Assistant Professor of Surgery (General).*  
 Herbert G. Voelz, Dr.Rer.Nat. (U. Greifswald, Ger.), *Professor of Microbiology.*  
 Edward Voss, Jr., M.D. (U. Buffalo), *Clinical Associate Professor of Surgery (General).*  
 Thomas G. Wack, M.D. (WVU), *Clinical Instructor in Family Practice.*  
 John A. Wade, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
 Robert H. Waldman, M.D. (Wash. U.), *Professor and Chairman of Medicine; Professor of Behavioral Medicine and Psychiatry.*  
 Brian K. Walker, M.D. (Cornell U.), *Assistant Professor of Medicine (Hematology/Oncology).*  
 David K. Walker, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Elizabeth R. Walker, Ph.D. (WVU), *Assistant Professor of Anatomy.*  
 Albert L. Wanner, M.D. (U. Pitt.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Stephen D. Ward, M.D. (U. Pitt.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Herbert E. Warden, M.D. (U. Chi.), Ph.D. (U. Ill.), *Professor of Surgery (General).*  
 Carolyn S. Warren, M.D. (Case West. Res. U.), *Assistant Professor (part-time) of Medicine, Charleston Division.*  
 Stafford G. Warren, M.D. (U. Rochester), *Clinical Associate Professor of Medicine (General Internal).*  
 Alvin L. Watne, M.D. (U. Ill.), *Professor and Chairman of Surgery; Professor of Behavioral Medicine and Psychiatry.*  
 Charles W. Weart, Pharm.D. (Phila. C. Pharm.), *Associate Professor of Family Practice.*  
 Deleno H. Webb, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Kenneth C. Weber, Ph.D. (U. Minn.), *Professor (part-time) of Physiology and Biophysics.*  
 Harry S. Weeks, Jr., M.D. (U. Md.), *Clinical Professor of Anesthesiology.*  
 Charles C. Weise, M.D. (U. Penn.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Roland J. Weisser, Jr., M.D. (WVU), *Associate Professor of Family Practice.*  
 Carolyn D. Welcker, Cert.PT (Med. C. Va.), *Clinical Instructor in Physical Therapy.*



William A. Welton, M.D. (U. Md.), *Professor of Medicine; Chairman, Division of Dermatology.*  
Stanley Wendkos, M.S. (Temple U.), *Clinical Instructor in Physical Therapy.*  
David P. Westfall, Ph.D. (WVU), *Professor of Pharmacology and Toxicology.*  
Edward R. Wheatley, M.D. (WVU), *Clinical Assistant Professor of Radiology.*  
Charles E. Whitaker, M.D. (U. Pitt.), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
Carol S. White, B.S. (U. Md.), *Clinical Instructor in Physical Therapy.*  
Charles A. White, M.D. (U. Utah), *Professor and Chairman of Obstetrics and Gynecology.*  
Kenneth L. Wible, M.D. (Jeff. Med. C.), *Associate Professor of Pediatrics.*  
Isiah A. Wiles, M.D. (U. Chi.), *Clinical Associate Professor Emeritus of Community Medicine.*  
James H. Wiley, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery (Orthopedics).*  
Ronald L. Wilkinson, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
David H. Williams, M.D. (Cornell U.), *Clinical Associate Professor of Radiology (Diagnostic).*  
Patricia W. Williams, M.D. (WVU), *Assistant Professor of Medicine (Behavioral and Ambulatory).*  
Patrick C. Williams, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
T. Walley Williams, Ph.D. (U. Pitt.), *Professor Emeritus of Anatomy.*  
Robert S. Wilson, M.D. (J. Hopkins U.), *Clinical Assistant Professor of Surgery (Orthopedics).*  
Mary J. Wimmer, Ph.D. (U. N.C.), *Assistant Professor of Biochemistry.*  
George H. Wirtz, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry.*  
David J. Withersty, M.D. (WVU), *Associate Professor and Assistant Chairman of Behavioral Medicine and Psychiatry; Associate Professor of Medicine (Behavioral and Ambulatory).*  
Loraine T. Withersty, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
John J. Wolf, Jr., M.D. (Wk. Forest U.), *Clinical Assistant Professor of Pediatrics.*  
William D. Wyant, M.P.A. (WVU), *Assistant Professor of Community Medicine.*  
Merrill Wymer, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
David B. Yelton, Ph.D. (U. Mass.), *Associate Professor of Microbiology.*  
Jeffrey M. Yost, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
George L. Zaldivar, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
John J. Zarski, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
Frank G. Zavisca, M.D. (SUNY—Buff.), Ph.D. (MIT), *Assistant Professor of Anesthesiology.*  
John F. Zeedick, M.D. (U. Pitt.), *Clinical Associate Professor of Anesthesiology.*  
Bernard Zimmermann, M.D. (Harvard U.), Ph.D. (U. Minn.), *Professor of Surgery (General).*

## School of Nursing

Kay Battles, R.N., M.S. (Tex. Wom. U.), *Instructor.*  
Shirley K. Bell, R.N., M.S.N. (Wayne St. U.), *Associate Professor.*  
Ruth H. Bohrer, R.N., M.S. (Case West. Res. U.), *Assistant Professor.*  
Mary Frances Borgman, R.N., M.Ed. (Duquesne U.), *Associate Professor; Chairperson, Senior Faculty.*  
Sally A. Bryan, R.N., M.S. (U. Pitt.), *Assistant Professor; Acting Chairperson, Graduate Faculty.*  
Mary Jo Butler, R.N., M.S. (U. Md.), *Assistant Professor; Chairperson, Charleston.*  
Marie Caruso, R.N., M.S. (U. Ariz.), *Instructor (part-time).*  
Caroline Charonko, R.N., M.S.N. (WVU), *Instructor.*  
Anita Chinnici, R.N., M.S. (U. Del.), *Instructor (part-time).*  
Doris Clearage, R.N., M.S. (U. Ariz.), *Assistant Professor.*  
Patricia A. Diehl, R.N., M.A. (WVU), *Associate Professor.*  
O. B. Fawley, M.S.W. (WVU), *Instructor (part-time).*  
Marguerite Gabriele, R.N., M.N. (Yale U.), *Instructor (part-time).*  
Suzanne Gross, R.N., M.N.Ed. (U. Pitt.), *Assistant Professor.*  
Debra L. Harr, R.N., M.P.H. (J. Hopkins U.), *Assistant Professor; Acting Chairperson, Sophomore Faculty.*  
Kathleen Heverley, R.N., M.S. (Boston U.), *Instructor.*  
Jean M. Hoff, R.N., M.P.H. (U. Pitt.), *Associate Professor; Assistant to Dean.*  
Joan R. Howard, R.N., M.S.N. (U. Penn.), *Assistant Professor.*  
Annette L. James, R.N., M.S.N.Ed. (U. Rochester), *Assistant Professor.*  
Lorita D. Jenab, R.N., Ed.D. (Columbia U.), *Professor and Dean.*  
Patricia Johnston, R.N., M.S.N. (Ohio St. U.), *Instructor (part time).*  
Christina Joy, R.N., M.S. (U. Colo.), *Instructor.*  
Judith C. Kandzari, R.N., M.A. (WVU), *Instructor.*  
Nancy A. Koontz, R.N., M.S.N. (U. Md.), *Associate Professor.*

Pauline Lappe, R.N., M.P.H. (U. Pitt.), *Instructor*.  
 Barbara Limandri, R.N., M.S.N. (Cath. U. Am.), *Assistant Professor*.  
 Kenneth McKain, B.S. (Ind. U., Pa.), *Clinical Instructor*.  
 Gaynelle McKinney, R.N., M.S.N.Ed. (Ind. U.), *Professor; Chairperson, Continuing Education*.  
 Virginia G. Mahaven, B.S.N. (Ohio St. U.), *Clinical Instructor*.  
 Margaret A. Marcinek, R.N., M.S. (U. Md.), *Assistant Professor*.  
 Kathleen H. Marsland, R.N., M.S. (U. Colo.), *Assistant Professor*.  
 W. Annette Massey, R.N., M.S.N. (Yale U.), *Associate Professor*.  
 Karen E. Miles, R.N., M.S.N. (WVU), *Instructor*.  
 Mary Minderhout, R.N., M.S. (U. Minn.), *Instructor (part-time)*.  
 Marsha F. Mitchell, B.S.N. (Alderson-Broaddus C.), *Clinical Instructor (part-time)*.  
 Deborah Morrison, B.S.N. (WVU), *Clinical Instructor*.  
 Cynthia Neely, R.N., M.S. (WVU), *Instructor (part-time)*.  
 Lois E. O'Kelley, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.  
 C. Lynne Ostrow, R.N., M.S. (U. Cal.), *Assistant Professor*.  
 Joan Paternoster, R.N., M.S. (Adelphi U.), *Instructor (part-time)*.  
 Jacqueline W. Riley, R.N., M.N. (U. Fla.), *Assistant Professor*.  
 Martha S. Rock, R.N., M.S.N. (Ohio St. U.), *Assistant Professor; Chairperson, Junior Faculty*.  
 Anne M. Rockenstein, R.N., M.S.N.Ed. (Cath. U. Am.), *Associate Professor*.  
 Judith T. Romano, B.S.N. (Alderson-Broaddus C.), *Clinical Instructor*.  
 Jane A. Shrewsbury, R.N., M.N.Ed. (U. Pitt.), *Associate Professor*.  
 Natalie M. Stafford, R.N., M.N. (U. Pitt.), *Associate Professor*.  
 Jacqueline Stemple, R.N., M.S.N. (WVU), *Assistant Professor (part-time)*.  
 Fredona E. Stenger, R.N., M.S.N. (Boston U.), *Associate Professor*.  
 Phyllis S. Tyzenhouse, R.N., M.S. (U. Pitt.), *Associate Professor (part-time)*.  
 Karen Whitley, B.S.N. (E. Tenn. St. U.), *Clinical Instructor*.  
 Beverly Zinn, B.S.N. (WVU), *Clinical Instructor*.

## School of Pharmacy

Scot A. Anderson, B.S. (WVU), *Clinical Instructor*.  
 Louis J. Anile, B.S. (Duquesne U.), *Clinical Instructor*.  
 John A. Angotti, B.S. (WVU), *Clinical Instructor*.  
 Irma M. Anido, B.S. (WVU), *Instructor in Pharmacy*.  
 H. John Baldwin, Ph.D. (Purdue U.), *Associate Professor of Pharmacy Administration; Coordinator, Administrative and Behavioral Sciences*.  
 James D. Bartsch, B.S. (U. Wisc.), *Clinical Instructor*.  
 David P. Bell, B.S. (WVU), *Clinical Instructor*.  
 John U. Bell, Ph.D. (U. Dalhousie), *Assistant Professor (part-time) of Pharmacology*.  
 N. S. Bovenizer, B.S. (Ohio North. U.), *Clinical Instructor*.  
 Calvin C. Brister, Ph.D. (U. Miss.), *Associate Professor of Biopharmacy*.  
 James A. Calemine, B.S. (WVU), *Clinical Instructor*.  
 John W. Chapman, B.S. (WVU), *Clinical Instructor*.  
 Nicholas H. Choulis, Ph.D. (U. London), *Professor of Pharmaceutics*.  
 Harry A. Comm, B.S. (WVU), *Clinical Instructor*.  
 John E. Corkrean, B.S. (WVU), *Clinical Instructor*.  
 Timothy R. Covington, Pharm.D. (U. Mich.), *Associate Professor of Clinical Pharmacy; Coordinator, Clinical Pharmacy and Pharmaceutical Services*.  
 Stephen D. Crawford, B.S. (WVU), *Clinical Instructor*.  
 Scott R. Criss, B.S. (WVU), *Clinical Instructor*.  
 S. A. Cunningham, C.P.A., B.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration*.  
 Betty M. Daniels, M.S. (U. N.C.), *Associate Professor (part-time) of Hospital Pharmacy*.  
 Judith M. Deglin, Pharm.D. (Phila. C. Pharm.), *Assistant Professor of Clinical Pharmacy*.  
 James J. Doyle, B.S. (WVU), *Clinical Instructor*.  
 Terry E. Edgell, B.S. (U. Conn.), *Clinical Instructor*.  
 Robert Flanagan, B.S. (U. Cincin.), *Clinical Instructor*.  
 Gary Fragale, B.S. (WVU), *Clinical Instructor*.  
 Jack E. Fruth, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Barbara J. Gastineau, B.S. (WVU), *Clinical Instructor*.  
 Kenneth H. Gianettino, B.S. (WVU), *Clinical Instructor*.  
 Douglas L. Gill, B.S. (WVU), *Instructor in Pharmacy*.  
 Harry A. Goodykoontz, B.S. (WVU), *Clinical Instructor*.  
 John W. Griffith, B.S. (Ohio St. U.), *Clinical Instructor*.

Willard S. Griffith, B.S. (Cincin. C. Pharm.), *Clinical Instructor*.  
 E. K. Hammond, Pharm.D. (U. Mich.), *Clinical Instructor*.  
 Harold H. Harper, M.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration*.  
 Robert E. Hickman, B.S. (U. Cincin.), *Clinical Instructor*.  
 L. Dean Holmes, B.S. (WVU), *Clinical Instructor*.  
 Stephen A. Howard, Ph.D. (U. Mich.), *Associate Professor of Pharmacy*.  
 Robert H. Hoy, Pharm.D., (U. Cal.), *Assistant Professor of Clinical Pharmacy*.  
 Arthur I. Jacknowitz, Pharm.D. (Phila. C. Pharm.), *Associate Professor of Clinical Pharmacy*.  
 Richard Jarvis, B.S. (WVU), *Clinical Instructor*.  
 Francis Judy, B.S. (WVU), *Clinical Instructor*.  
 Steven Judy, B.S. (WVU), *Clinical Instructor*.  
 Guy Lang, B.S. (WVU), *Clinical Instructor*.  
 Richard Lewis, B.S. (Ohio North. U.), *Clinical Instructor*.  
 James Kai-Jain Lim, Ph.D. (U. N.C.), *Professor of Pharmaceutics*.  
 Robert T. Lindsay, M.S. (Mass. C. Pharm.), *Clinical Instructor*.  
 Buford T. Lively, M.S. (Marshall U.), *Lecturer in Pharmacy*.  
 Robert B. Lowe, Pharm.D. (U. Mich.), *Clinical Associate Professor*.  
 Daniel Lusk, B.S. (WVU), *Clinical Instructor*.  
 Louis A. Luzzi, Ph.D. (U. R.I.), *Dean and Professor of Pharmaceutics*.  
 Joseph K. H. Ma, Ph.D. (Duquesne U.), *Assistant Professor of Medicinal Chemistry*.  
 Carl J. Malanga, Ph.D. (Fordham U.), *Professor of Biopharmacy; Coordinator, Basic Pharmaceutical Sciences*.  
 Mary Lou Malanga, B.S. (Fordham U.), *Clinical Instructor*.  
 Carroll Martin, B.S. (WVU), *Clinical Instructor*.  
 John W. Mager, Ph.D. (U. R.I.), *Professor of Pharmacy*.  
 Amadee Merbedone, B.S. (WVU), *Clinical Instructor*.  
 Ronald W. Meredith, B.S. (WVU), *Clinical Instructor*.  
 Vernon R. Midcap, B.S. (WVU), *Clinical Instructor*.  
 John E. Miller, B.S. (WVU), *Clinical Instructor*.  
 Richard P. Miller, Ph.D. (U. Iowa), *Assistant Professor of Biopharmaceutics*.  
 Kenneth Muha, B.S. (U. Ga.), *Clinical Instructor*.  
 Donn Neuman, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Frank D. O'Connell, Ph.D. (Purdue U.), *Assistant Dean and Professor of Pharmacognosy*.  
 John P. O'Donnell, Ph.D. (U. Iowa), *Assistant Professor of Medicinal Chemistry*.  
 Frederick Pfeiffer, Pharm.D. (U. Tex.), *Assistant Professor of Clinical Pharmacy*.  
 Robert B. Pierce, B.S. (WVU), *Clinical Instructor*.  
 John P. Plummer, B.S. (WVU), *Clinical Instructor*.  
 William Plyburn, B.S. (U. Cincin.), *Clinical Instructor*.  
 Terrence S. Prettyman, B.S. (WVU), *Clinical Instructor*.  
 Woodrow J. Proveaux, Pharm.D. (U. Mich.), *Assistant Professor of Clinical Pharmacy*.  
 David A. Riley, Ed.D. (U. Ga.), *Assistant Professor of Pharmacy Administration; Coordinator of Continuing Education*.  
 Paul Ritchie, B.S. (WVU), *Clinical Instructor*.  
 Harry Scott, B.S. (WVU), *Clinical Instructor*.  
 A. Ray Shaw, B.S. (WVU), *Clinical Instructor*.  
 Clara Fay G. Skarzenski, B.S. (WVU), *Instructor in Pharmacy*.  
 Benton B. Smith, B.S. (WVU), *Clinical Instructor*.  
 David K. Solomon, Pharm.D. (U. Tenn.), *Clinical Instructor*.  
 Everett B. Stanley, B.S. (WVU), *Clinical Instructor*.  
 Gilbert A. Steiner, Pharm.D. (Wayne St. U.), *Assistant Professor of Clinical Pharmacy*.  
 Robert Stout, B.S. (WVU), *Clinical Instructor*.  
 Eugene S. Stratford, Ph.D. (Ohio St. U.), *Associate Professor of Medicinal Chemistry*.  
 Basil G. Swisher, M.S. (WVU), *Clinical Instructor*.  
 Monika Tonkovich, Pharm.D. (SUNY), *Clinical Instructor*.  
 Edward A. Toompas, B.S. (WVU), *Clinical Instructor*.  
 John F. Tourville, Pharm.D. (SUNY), *Assistant Professor of Clinical Pharmacy*.  
 Charles Turk, B.S. (WVU), *Clinical Instructor*.  
 Irvin VanMeter, B.S. (WVU), *Clinical Instructor*.  
 Peter Vladimery, B.S. (WVU), *Clinical Instructor*.  
 Sarah Z. Wallace, B.S. (WVU), *Clinical Instructor*.  
 C. Wayne Weart, Pharm.D. (Phila. C. Pharm.), *Associate Professor of Clinical Pharmacy*.  
 Arlie A. Winters, B.S. (WVU), *Clinical Instructor*.  
 Albert F. Wojcik, Ph.D. (U. Pitt.), *Professor of Pharmacy Administration*.  
 Fred L. Zicafoose, B.S. (WVU), *Clinical Instructor*.



## Medical Center Staff

- Margaret P. Abbott, M.P.H. (U. Minn.), *Director, Dietetics Department, University Hospital.*  
Marguerite E. Abel, B.S. (U. Ill.), *Assistant Librarian.*  
John Ambrose, *Superintendent, Maintenance, Medical Center.*  
Diane L. Buckner, M.S. (Tuskegee Inst.), *Associate Director, Dietetics Department, University Hospital.*  
Douglas A. Clark, M.H.A. (U. Minn.), *Associate Administrator and Clinic Manager, University Hospital.*  
William S. Crislip, *Medical TV Supervisor.*  
Glenn D. Crowe, B.A. (U. N.C.), *Assistant to Vice President—Health Sciences.*  
Betty M. Daniels, M.S. (U. N.C.), *Chief, Pharmacy and Central Supply Services, University Hospital.*  
Charles E. Flink, M.B.A. (WVU), *Associate Administrator, University Hospital.*  
Elizabeth S. Furfari, B.S.J. (WVU), *Assistant Information Officer.*  
Barbara L. Gould, M.A. (J. Hopkins U.), *Medical Illustration Supervisor.*  
Harold H. Harper, M.S. (WVU), *Assistant to Vice President—Health Sciences.*  
Gloria J. Heard, *Medical Photography Supervisor.*  
Don E. Killen, M.S.W. (U. Pitt.), *Director, Social Services, University Hospital.*  
Linda M. Jackowitz, M.S.L.S. (SUNY), *Audiovisual Librarian.*  
Lee E. McIntyre, *Supervisor, Electronics Laboratory.*  
Jean A. McKee, M.S.L.S. (U. Pitt.), *Technical Services Librarian.*  
Kathleen A. Moore, B.S. (Alderson-Broadus C.), *Associate Director, Nursing Service, University Hospital.*  
Anna Moson, M.A. (U. Pitt.), *Director, Nursing Service, University Hospital.*  
Robert L. Murphy, M.S.L.S. (Cath. U. Am.), *Librarian.*  
Irene J. Roby, *Assistant to Dean of Admissions and Records.*  
Joseph R. Ross, M.H.A. (Xavier U.), *Assistant Administrator, University Hospital.*  
Sue Smallwood, B.S. (W. Va. Wesl. C.), *Associate Director, Dietetics Department.*  
Jeffery M. Stull, B.A. (WVU), *Medical Records Supervisor.*  
Steven Teich, M.S.L.S. (U. Md.), *Network Librarian.*  
J. Richard Toren, B.S.J. (WVU), *Associate Director, Public Affairs/Medical Center News Service.*  
Bernard G. Westfall, M.S. (WVU), *Associate Administrator, Finance and Systems, University Hospital.*  
Mary Ellin Wylie, A.B. (WVU), *Information Officer.*

# 1979

JANUARY	FEBRUARY	MARCH	APRIL
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 8 9 10 11 12 13 15 16 17 18 19 20 22 23 24 25 26 27 29 30
MAY	JUNE	JULY	AUGUST
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 5 6 7 8 9 10 12 13 14 15 16 17 19 20 21 22 23 24 26 27 28 29 30 31
SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	2 3 4 5 6 7 9 10 11 12 13 14 16 17 18 19 20 21 23 24 25 26 27 28 30 31

# 1980

JANUARY	FEBRUARY	MARCH	APRIL
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 6 7 8 9 10 11 13 14 15 16 17 18 20 21 22 23 24 25 27 28 29 30
MAY	JUNE	JULY	AUGUST
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 3 4 5 6 7 8 10 11 12 13 14 15 17 18 19 20 21 22 24 25 26 27 28 29 31
SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 7 8 9 10 11 12 14 15 16 17 18 19 21 22 23 24 25 26 28 29 30 31



West Virginia University Medical Center.



Medical Education Building of the Charleston Division—WVU Medical Center.



1979-80 Medical Center Catalog  
West Virginia University  
Office of Admissions and Records  
Morgantown, WV 26506

West Virginia University Bulletin  
(USPS 676-980)

Second Class Postage Paid at  
Morgantown, WV 26506

Entered at Morgantown, WV  
as second-class matter under  
Act of August 24, 1912



West Virginia  
University



# **West Virginia University Bulletin**

---

**1980-81**



## **Medical Center Catalog**

COVER: The WVU Personal Rapid Transit (PRT) system connects the WVU Medical Center with the Evansdale and Downtown campuses, as well as the central business district of Morgantown.



Sculptured pylons at the entrance to the Basic Sciences Building of the WVU Medical Center depict milestones in the health sciences.



# West Virginia University Medical Center 1980-81 Catalog

---

## Medical Center Basic Sciences School of Dentistry

Dental Hygiene

## School of Medicine

Medical Technology

Physical Therapy

## School of Nursing

## School of Pharmacy

The 1980-81 West Virginia University Medical Center Catalog must be considered as a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. The courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Board of Regents, the administrators of the University, and the faculties of schools and colleges in order to best meet the goals and objectives of the University. The University therefore reserves the right to change, delete, supplement or otherwise amend at any time the information, course offerings, requirements, rules and policies contained herein without prior notice.

*West Virginia University is an Equal Opportunity-Affirmative Action institution. In compliance with Federal Executive Order No. 11246 as amended, Title VII of the Civil Rights Act, West Virginia Human Rights Act Title IX (Educational Amendments of 1972), Sections 503 and 504 of the Rehabilitation Act of 1973, and other applicable laws and regulations, the University provides equal opportunity to all prospective and current members of the student body, faculty, and staff on the basis of individual qualifications and merit without regard to race, sex, religion, age, national origin, or handicap, as identified and defined by law.*

*The University neither affiliates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, color, age, religion, sex, national origin, or handicap, as defined by applicable laws and regulations.*

*—Office of the President*

## West Virginia Board of Regents

950 Kanawha Boulevard, East

Charleston, WV 25301

Earle T. Andrews, Berkeley Springs  
Forrest L. Blair, Walker  
Andrew L. Clark, Princeton  
Sue Seibert Farnsworth, Wheeling  
Paul J. Gilmer, Charleston  
Edward H. Greene, Huntington  
Russell L. Isaacs, Charleston  
Albert M. Morgan, Morgantown  
John W. Saunders, Beckley  
Francis K. Aldred, ex officio, Huntington  
James M. Scott, ex officio, Fairmont  
Roy Truby, ex officio, Charleston

## West Virginia University Advisory Board

Office of the President

Morgantown, WV 26506

Charles C. Wise, Jr., *Chairman*, Charleston  
Paul B. Martin, *Vice-Chairman*, Martinsburg  
J. Reginald Dietz, Weirton  
James H. Harless, Gilbert  
Richard A. Raese, Morgantown  
Hazel L. Ruby, Morgantown  
Fred R. Toothman, Huntington  
Harold J. Shamberger, *Secretary*  
Gene A. Budig, *President*

West Virginia University Bulletin (USPS 676-980)

Series 80, No. 9-3, March, 1980

Issued Monday, Wednesday, and Friday

Second-class postage paid at Morgantown, WV 26506

# Contents

- University Calendar, 1980-81 .....4
- West Virginia University Medical Center .....5
  - University Hospital.....5
  - Radiologic Technology .....6
  - Coordinated Undergraduate Dietetics Program.....6
  - Dental Clinic .....7
  - University Health Service .....7
  - Library .....7
- Admissions.....7
- Fees and Expenses .....12
- Health Science Programs at WVU.....13
- Regulations Affecting Degrees .....19
- Medical Center Basic Sciences .....34
  - Anatomy.....34
  - Biochemistry .....37
  - Conjoined Basic Sciences Courses .....39
  - Microbiology .....39
  - Pathology.....42
  - Pharmacology and Toxicology .....42
  - Physiology .....45
- School of Dentistry .....48
  - Doctor of Dental Surgery Program.....48
  - Endodontic Program .....60
  - Orthodontic Program.....62
  - Dental Hygiene Program.....63
- School of Medicine.....68
  - Medical Technology .....82
  - Division of Physical Therapy .....87
- School of Nursing.....92
- School of Pharmacy .....101
- Faculty and Staff .....111

Edited by Stanley J. Nels,  
*Associate University Editor*



# University Calendar, 1980-81

## Summer Sessions, 1980

May 19, Monday .....	Registration, First Summer Session
May 20, Tuesday .....	First Classes
May 26, Monday .....	Memorial Day Recess
June 27, Friday .....	Last Classes
June 30, Monday .....	Registration, Second Summer Session
July 1, Tuesday .....	First Classes
July 4, Friday .....	Independence Day Recess
August 8, Friday .....	Last Classes

## First Semester, 1980-81

August 21, 22, Thursday and Friday .....	Freshman Orientation
August 22, Friday .....	Registration
August 25, Monday .....	First Classes
September 1, Monday .....	Labor Day Recess
September 11, Thursday .....	Rosh Hashanah—Day of Special Concern
September 20, Saturday .....	Yom Kippur—Day of Special Concern
October 10, Friday .....	Mid-Semester
October 10, Friday .....	Mid-Semester Reports Due
November 22, Saturday, to November 30, Sunday, incl. ....	Thanksgiving Recess
December 12, Friday .....	Last Classes
December 15, Monday, to December 20, Saturday, incl. ....	Final Examinations
December 21, Sunday, to January 11, Sunday, incl. ....	Christmas Recess

## Second Semester, 1980-81

January 9, Friday .....	Registration
January 12, Monday .....	First Classes
January 15, Saturday .....	Martin Luther King's Birthday— Day of Special Concern
February 7, Saturday (not a holiday) .....	West Virginia University Day
February 16, Monday .....	Washington's Birthday Recess
February 27, Friday .....	Mid-Semester
February 27, Friday .....	Mid-Semester Reports Due
April 7, Tuesday .....	Faculty Assembly Meeting
April 11, Saturday, to April 20, Monday, incl. ....	Spring Recess
April 20, Monday .....	Easter Recess
May 1, Friday .....	Last Classes
May 4, Monday, to May 9, Saturday, incl. ....	Final Examinations
May 11, Monday .....	Grade Report for all Graduates Due in Dean's Office
May 12, Tuesday .....	Dean's Reports of Graduates Due in Office of Admissions and Records
May 16, Saturday .....	Alumni Day
May 17, Sunday .....	Commencement

*The academic year is divided into two semesters of approximately seventeen weeks each and two summer sessions.*

# West Virginia University Medical Center

West Virginia University Medical Center is the keystone of a statewide structure for educating health professionals and improving the health of all West Virginians. It houses schools of dentistry, medicine, nursing, pharmacy, the basic sciences, and a 440-bed teaching hospital. Allied health professionals also are educated here. In the two decades since it was established, total enrollment has passed the 1,500 mark.

It is the center, too, of statewide continuing education programs and a referral center for physicians and other health professionals in all sections of West Virginia. Telephone consultations on a two-hour callback basis, with complete followup, are available to physicians statewide.

Until 1960, pharmacists were the only health professionals who could obtain all their education at the state university. Medicine offered only a two-year program, and nursing and dentistry none. The transition began in 1951 when the Legislature authorized construction of the WVU Medical Center and levied a penny-a-bottle tax on soft drinks to provide basic financing.

The WVU Medical Center was planned as a single structure—Basic Sciences Building and University Hospital under one roof—on the Evansdale Campus north of the Downtown Campus. The Basic Sciences portion opened in 1957; first degrees were awarded in the early 1960s. Dentistry now enrolls 240 students, medicine more than 350, and nursing 300 in four-year programs; and pharmacy 205 in a five-year curriculum. Dental hygiene, medical technology, and physical therapy students number nearly 200; basic science students 90; and post-doctoral residents 180.

In 1972, WVU and the Charleston Area Medical Center—the state's largest hospital complex—began a partnership to develop medical and other health science programs. They were based in hospitals and other facilities already in place, but in 1977 a \$6 million Medical Education Building was opened. It serves as the center for the clinical education programs. The Charleston Division of the WVU Medical Center expands the patient base and student capacity for WVU's health sciences educational programs. It serves students in dentistry, medicine, nursing, pharmacy, and allied health fields, in addition to offering specialty training.

In 1974 the WVU School of Medicine established the Wheeling Division in cooperation with Ohio Valley General Hospital and Wheeling Hospital. The program is overseen by a joint Wheeling Area Medical Education Committee and offers elective opportunities for fourth-year students and postgraduate specialty training.

At the WVU Medical Center, as well as its Charleston Division and the School of Medicine's Wheeling Division, equal emphasis is given to teaching, research, and service—the pillars of sound health sciences education. Instruction is closely integrated among the health sciences, and there is a continuous search for improved ways of teaching.

## University Hospital

West Virginia University Hospital is a 440-bed health center where education of students and advancement of knowledge goes hand in hand with the best in medical

Nonacademic policies and regulations affecting students are summarized in the *Student Handbook*. Every student is urged to obtain a copy of the *Student Handbook* from the Office of Student Educational Services, 205 Moore Hall.

care. It is the hub of the Medical Center complex, providing the training ground where students learn the science and art of caring for patients.

Services in some 50 specialties are provided for bed patients as well as through clinics where more than 2,000 patients are seen weekly. Emergency Room service is provided around the clock, with more than 39,000 visits recorded annually.

Patients come to University Hospital and its clinics from all parts of West Virginia. They find expertise, equipment, and experience sometimes not available at other West Virginia hospitals, in areas such as transplant surgery, bladder pacemakers, linear accelerator radiation therapy, pediatric surgery, and cleft palate repair.

Clinic management operations have been streamlined to meet a growing public demand for efficient, quality, personalized health care. All internal medicine subspecialty clinics have been merged into a new General Medicine Clinic, providing a multidisciplinary team to handle almost any health problem.

## Radiologic Technology

A two-year course for radiologic technologists is offered by the Department of Radiology at University Hospital. This course is covered by lectures, group discussions, anatomy and physiology, radiologic physics, radiographic techniques, radiation therapy, radioisotopes, medical terminology, nursing procedures, administration and professional ethics, as these pertain to the training of radiologic technologists. Subjects taken have not carried college credit in the past, but discussions are under way concerning the granting of such credits. Practical experience is gained on assigned tours of duty under the supervision of staff members.

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee. Students provide their own lodging and meals.

Upon completion of the program, a certificate is awarded each student who is then eligible to take the American Registry Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Training, Department of Radiology, University Hospital, Morgantown, WV 26506.

## Coordinated Undergraduate Dietetics Program

The Coordinated Undergraduate Dietetics Program is jointly sponsored by the Department of Family Resources (College of Human Resources and Education) and University Hospital. The program offers diverse learning opportunities through academic courses in various divisions of the University and the Medical Center, and clinical experience in hospitals and community agencies.

After successful completion of the four-year program the student is awarded the degree of Bachelor of Science (B.S.) with a major in dietetics from the Department of Family Resources, College of Human Resources and Education. Clinical experience during the period of study enables the graduate to become a member of the American Dietetics Association without an additional internship period and eligible for the Registration Examination.

The student enters the program at the beginning of the junior year.

To qualify for application a candidate must have completed prescribed courses, with at least a 2.5 overall grade-point average—2.25 in science courses and 3.0 in nutrition and foods courses.

Final acceptance in the Coordinated Undergraduate Dietetics Program is subject to approval by the Admission Committee. An interview with the committee is required. *Enrollment is limited and priority will be given West Virginia residents.*



## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student is assigned to a patient and must work under close supervision of a faculty member. The clinic program provides practical experience for the student and a much needed service to several thousand patients annually.

## University Health Service

The University Health Service provides primary medical care for WVU students, faculty, and staff. Each regularly enrolled student pays a fee which covers medical consultation and treatment at the Health Service on the ground floor of University Hospital or in the Emergency Room. It also covers limited payment for inpatient care at University Hospital. A voluntary insurance plan is available to students to cover the cost of inpatient and outpatient services beyond primary care. Students are strongly advised to obtain it. Details are available in a Health Service brochure.

## Library

The Medical Center Library, now part of the Medical Center Learning Resources Center, serves the students, faculty, and staff of the four schools and University Hospital. Its services are available to health professionals throughout West Virginia and to the general public when needed.

The library in the Basic Sciences Building contains approximately 110,000 bound volumes. More than 2,200 domestic and foreign periodicals are currently received.

The Medical Center Library and the central University Library maintain an active interlibrary loan service. Material not in either library may be borrowed from libraries in other cities.

The library is open, except on holidays, from 8:00 a.m. to midnight, Monday through Thursday; from 8:00 a.m. to 11:00 p.m., Friday; from 9:00 a.m. to 5:00 p.m., Saturday; and from 2:00 p.m. to 11:00 p.m., Sunday. Changes in scheduled hours are posted in advance.

## Admissions

### Admission to Medical Center Programs

Applicants for admission to any of the schools of the WVU Medical Center should write to the Administrative Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, who will furnish official blanks upon which formal application must be made.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

When requesting an application by letter for any of the Medical Center programs, the permanent home address must be given.

A \$10.00 application fee is required and must accompany the applications of all but Dental Hygiene students, who pay no application fee.

Any applicant who is refused admission, or who fails to enroll after acceptance, must re-apply in the regular manner if consideration for a subsequent year is desired.

Those applicants accepted for admission to any of the programs of the WVU Medical Center, except the Division of Dental Hygiene and out-of-state applicants to the School of Dentistry, are required to deposit \$50.00 before acceptance becomes official. Applicants accepted to the Division of Dental Hygiene deposit \$40.00, and out-of-state applicants accepted to the School of Dentistry deposit \$100. If the applicant enrolls in the program of the applicant's choice, the deposit is applied to first-semester tuition.

If an application for admission to the School of Medicine is withdrawn after the applicant has been offered a place and has submitted a deposit, such deposit may be refunded any time before March 30 of the year in which enrollment is anticipated, but will not be refunded after this date. Deposits submitted to all other programs are nonrefundable.

It is required that during the first semester of the first year all WVU Medical Center students must complete certain prescribed immunization and diagnostic procedures.

## Admission to WVU

Students may be considered for admission to WVU on the basis of graduation and transcripts from accredited high schools. High school graduates are required to present credit for 4 units of English and 1 unit of algebra. In addition, the health sciences require 1 unit of geometry.

(Special admissions regulations for individual Medical Center schools appear in subsequent pages of this *Catalog*.)

All students are required to take the American College Testing (ACT) Program tests and have the report of scores sent to WVU. This test is not used for admission, but for placement, and no other test may be substituted for it.

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools or from the College Scholarship Service, or the WVU Financial Aid Office. Submit only forms dated for the current academic year.

(*Your Guide to Financial Aid—West Virginia University* is available at the WVU Financial Aid offices, in the Mountainlair, Downtown Campus, and in 104 Basic Sciences Building, Medical Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.)

West Virginia high school students should obtain applications for admission from their high schools. Out-of-state students may write the WVU Office of Admissions and Records and request an application form. Applicants should prepare their part of the application and then return it to their school. The school then will send the completed application and transcript of the student's high school grades directly to the WVU Office of Admissions and Records.

Students should apply for admission when they have met these requirements—

### *West Virginia Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C<sub>ó</sub> or above), the student should apply as soon as possible after September 15.
2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.0 of a possible 4.0 (C or above), the student should apply as soon as possible after beginning the 8th semester.
3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the confidential report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the General Educational Development (GED) examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

*Out-of-State Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 3.0 of a possible 4.0 (B or above), the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above), the student should apply as soon as possible after the beginning of the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the confidential report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the GED examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

## Admission of Transfer Students

Applicants for transfer from another college or university should submit the following to the Office of Admissions and Records:

1. A complete application for undergraduate admission.

2. A certified transcript of all college work taken to date, including a statement of good standing. A certified statement covering subjects subsequently taken should be sent as soon as it is available.

3. Catalog pages describing all subjects which have or will have been completed. The applicant's name should be written on each page and each subject indicated by a check mark in the margin. Complete catalogs should not be sent. (*Not necessary from West Virginia colleges.*)

The cumulative average of all work attempted before transfer must be at least C.

Credits and grades earned for all baccalaureate-level courses at any baccalaureate degree-granting institution in the West Virginia state system of higher education and up to 72 hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia state system shall be transferable toward a bachelor's degree. (See also "Requirements As to Residence," page 21.)

Credits (though not grades) are transferable from institutions outside the West Virginia state system for courses carrying a grade of C or higher. A grade of D on the first of sequence courses may be transferred if the second course grade is C or higher.

Credits from two-year community colleges and junior colleges outside the West Virginia state system are limited to 72 hours of lower-division courses. These colleges must be accredited by the North Central Association of Colleges and Schools or another regional accrediting association.

The transfer of credits does not exempt the student from satisfying all the requirements for the student's degree program at WVU.

All transcripts must be in the Office of Admissions and Records three weeks in advance of registration.



Evaluation of transcripts for transfer of credit is furnished only after receipt of complete official transcripts and application for admission.

Transfer students generally are admitted only after they complete one full year at another institution. Applicants who have less than one full year of college work elsewhere must submit both their college and high school records. Students who have successfully completed 6 hours or less at another accredited institution will apply as freshmen.

#### **Intrauniversity Transfers**

Students transferring from Potomac State College of WVU shall be considered intrauniversity transfers. All records made at Potomac State College are part of the student's WVU record, but no more than 72 hours may be applied toward the baccalaureate degree.

If a change of major is involved, the transferee should consult the college, school, or department to which the student is transferring concerning requirements for the new major.

### **Admission of Special Students**

Persons not desiring to become candidates for a degree may, by special permission, be admitted as special students. Such students are subject in all respects to the usual rules relating to registration and scholarship. Admission to any class is subject to the approval of the instructor in charge.

Students who do not plan to follow a degree program at WVU should submit only a statement of good standing from the last college attended.

### **Admission of Post-Baccalaureate Students**

Students having one or more earned degrees from an approved college or university and desiring to enroll for undergraduate credit may be admitted as post-baccalaureate students. Students admitted in this category would not be working toward a graduate degree and credit earned while under this classification would be limited to undergraduate credit. Students admitted as post-baccalaureate, since they are limited to undergraduate credit, would be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an official transcript from the institution granting their latest degree.

### **Admission of Foreign Students**

Foreign students wishing to enroll at WVU must comply with the academic requirements for admission which have already been stated and with certain additional academic and nonacademic requirements, as follows.

#### **Early Inquiry and Application**

Foreign applicants should forward a letter of inquiry one year before the intended time of beginning study in the United States. Foreign students who have been granted admission are expected on campus at the beginning of July for a six-week period of orientation and an intensive study of English. Accordingly, all the papers on which admission is based must have been received at the University at the very latest by April 1, to allow sufficient time for their processing and the communication of the decision to the student, as well as for the student to make arrangements for passport and visa clearance and other necessary details.

Foreign students should make all arrangements for their financial obligations to WVU and for their entire stay in the United States before leaving their countries.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

### English Proficiency

No person should undertake graduate or undergraduate study at WVU who is not competent in the use of English. All foreign applicants the language of whose family and schooling was other than English must present a satisfactory score on the "Test of English As a Foreign Language" (TOEFL). (Applicants for graduate study must present a composite score of at least 550 on the TOEFL.)

Information on locations of TOEFL testing centers, dates of testing, and application forms is available from the Educational Testing Service, Princeton, NJ 08540 USA. Tests are normally given four times each year. It usually requires about one month to score and report individual test results. Registration for the TOEFL examination closes five weeks before the testing date.

### Credentials

Complete and original official records of all studies undertaken by an applicant at any institution attended (secondary school, college, university, technical school, professional school, etc.), must be provided at time of application for admission to WVU. Records may be copies, provided they are officially stamped. The records must show evidence of the study the applicant has done in the field of intended study at WVU.

Such records should include: (1) complete dates of attendance; (2) identification of individual subjects; (3) total number of hours in each class per week; (4) total number of weeks each class has in session; (5) final grade in each subject, for each year; (6) actual credits earned for each subject; (7) class, division, or rank achieved; (8) identification of the individual; (9) description and clarification of each institution's grading system; and (10) certification, and date, of degree or awards achieved, if not a part of the mark sheet or transcript. If any of this information cannot be supplied, an official **explanatory** statement from the school should be submitted. *(All documents must be in English.)*

All documents should be forwarded directly from the registrar or other authorized official of the school to the WVU Office of Admissions and Records.

If an applicant is currently enrolled in a school, tentative admission may be granted on the basis of an incomplete record which indicates the applicant will unquestionably meet the admission standards of WVU. Final admission, however, cannot be approved until the complete record has been received and evaluated.

### Foreign Students Transferring Within the United States

Foreign students applying to transfer from schools within the United States are advised that they will not be admitted and permitted to register at WVU unless they have complied well in advance with all requirements of the United States Immigration and Naturalization Service (INS).

The school the student was last authorized to attend must have completed and signed the INS form I-538. This, together with a valid I-20 form received from WVU, must have been submitted to the INS office having jurisdiction over the school the student was last authorized to attend. If the student is not now attending that school, a letter must be added explaining in detail why.

If the INS approves the transfer, this approval will be stamped on the student's I-94. The student must then immediately notify WVU that the transfer has been approved, either by sending an INS statement of transfer approval, or simply by reporting the fact that the approval appears on the I-94.

Only when these procedures have been completed will WVU undertake to admit and register the student. No student should move to Morgantown without having received this assurance of admission to WVU.

## Admission of Veterans

Veterans may be admitted to WVU with less than the minimum admission requirements necessary for other, nonveteran applicants.

Information regarding educational opportunities made possible at the University through provisions of the Veterans Readjustment Benefits Act of 1966—G.I. Bill (Public Law 358), the Vocational Rehabilitation Program of the Veterans Administration (Public Law 16), and the War Orphan's Educational Assistance Act of 1956 (Public Law 634) may be obtained from the Veterans Counselor by personal conference at his office in Mountainlair or by mail. An amendment to Public Law 634, enacted in 1964, provides benefits to many dependents of 100 percent disabled veterans.

Veterans having at least one continuous year of military service may be exempted from the physical education general program. No scholastic credit is given. Proof of military service should be presented to the Dean of Admissions and Records.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## Readmission

Undergraduate students who leave the University for at least one complete semester are required to submit an application for readmission to the Dean of Admissions and Records.

Students who have been suspended from the University must have written approval from the dean of the school or college from which the student was suspended.

Approval in writing must be secured in advance to elect courses offered elsewhere. A cumulative average of C is required in order to obtain such approval. Credit will be accepted for transfer for courses carrying a grade of C or higher when the conditions indicated above have been met.

Students wishing to change their major upon readmission must have permission from their previous dean and the dean of the college to which they wish to transfer.

## Fees and Expenses

All West Virginia University fees are subject to change without notice.

All fees are due and payable to the Controller on the days of registration. Medical Center students pay their fees at the Controller's Office, Basic Sciences Building. Students must pay fees before registration is accepted. Completion of arrangements with the Controller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for



# Health Science Programs At West Virginia University

<i>Major or Degree Program</i>	<i>Bachelor</i>	<i>Master</i>	<i>Doctorate</i>
<b>School of Dentistry</b>			
Dental Hygiene .....	B.S.		
Dentistry .....		M.S.	D.D.S.
Endodontics .....		M.S.	
Orthodontics .....		M.S.	
<b>School of Medicine</b>			
Anatomy .....		M.S.	Ph.D.
Biochemistry (Medical) .....		M.S.	Ph.D.
Medical Technology .....	B.S.	M.S.	
Medicine .....			M.D.
Microbiology (Medical) .....		M.S.	Ph.D.
Pharmacology and Toxicology .....		M.S.	Ph.D.
Physical Therapy .....	B.S.		
Physiology (Medical) .....		M.S.	Ph.D.
Biomedical Sciences .....			Ph.D.*
<b>School of Nursing</b>			
Nursing .....	B.S.N.	M.S.N.	
<b>School of Pharmacy</b>			
Pharmaceutical Sciences .....		M.S.	Ph.D.
Pharmacy .....	B.S.Pharm.		
<b>University Hospital</b>			
<b>Medical Graduate Residencies</b>			
Radiologic Technology .....	Certificate		

\*Awarded under the auspices of the degree-granting authority of WVU, but in cooperation with the Basic Sciences Departments of Marshall University School of Medicine.

acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair. Medical Center students pay at the Controller's Office, Basic Sciences Building.

All students are expected to register on days set apart for registration at the beginning of each semester or session of the University.

No student will be permitted to register at the University after the twelfth day of a semester or the fourth calendar day of a summer session. Days are counted from the first day of registration.

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$10.00.

Students registering pay the fees shown in the fees chart, plus special fees and deposits as required.

No degree will be conferred upon any candidate before payment of all tuition, fees, and other indebtedness to any unit of the University.

Persons not registered as University students and who are not members of its administrative or teaching staffs shall not be admitted to regular attendance in University classes.

# ESTIMATED EXPENSES FOR MEDICAL CENTER PROGRAMS (First Semester) [Subject to Change]

Tuition and registration are the same for both semesters. Some expenses, such as fees, instruments, and book costs will be different for the Second Semester.

School or Division	Tuition and Registration Fees			Instruments	Lab Coats, Uniforms, etc.	Books	Total	
	Resident	Nonresident	Fees*				Resident	Nonresident
<b>Dental Hygiene</b>								
Freshman	\$221.00	\$596.00	\$25.00		\$17.00	\$110.00	\$348.00	\$723.00
Sophomore	221.00	596.00	5.00	\$770.00	165.00	121.00	1,302.00	1,677.00
Junior	221.00	596.00	5.00	110.00	66.00	110.00	512.00	887.00
Senior	221.00	596.00	5.00	55.00	66.00	27.00	374.00	749.00
<b>Dentistry</b>								
First Year	283.00	701.00	38.00	1,552.00	80.00	316.00	2,269.00	2,687.00
Second Year	283.00	701.00	38.00	391.00	100.00	86.00	898.00	1,316.00
Third Year	283.00	701.00	14.00			109.00	406.00	924.00
Fourth Year	283.00	701.00	20.00				303.00	721.00
<b>Medical Technology</b>								
Junior	221.00	596.00	35.00		50.00	220.00	526.00	901.00
Summer	136.00	364.00			150.00	25.00	311.00	539.00
Senior	221.00	596.00			75.00	100.00	396.00	771.00
<b>Medicine</b>								
First Year	283.00	701.00	45.00	150.00	60.00	500.00	1,038.00	1,456.00
Second Year	283.00	701.00	55.00	450.00	60.00	400.00	1,248.00	1,666.00
Third Year	283.00	701.00			40.00	400.00	723.00	1,141.00
Fourth Year	283.00	701.00			40.00	250.00	573.00	991.00
<b>Nursing</b>								
Sophomore	221.00	596.00	5.00		116.00	150.00	492.00	867.00
Summer	132.00	474.00	5.00			50.00	187.00	529.00
Junior	221.00	596.00	5.00			20.00	246.00	621.00
Senior	221.00	596.00	5.00			80.00	306.00	681.00
<b>Pharmacy</b>								
Third Year	256.00	776.00		35.00	13.00	275.00	579.00	1,099.00
Fourth Year	256.00	776.00			13.00	275.00	544.00	1,064.00
Summer	256.00	776.00					256.00	776.00
Fifth Year	256.00	776.00			13.00	220.00	489.00	1,009.00
<b>Physical Therapy</b>								
Junior	221.00	596.00	5.00	15.00	60.00	250.00	551.00	926.00
Senior	221.00	596.00	5.00		60.00	160.00	446.00	821.00
Summer	48.00	219.00	10.00				58.00	229.00

\*Fees—includes lab fees, microscope rental, or graduation fee

## TUITION & REGISTRATION FEES BREAKDOWN

	Tuition		Registration	Higher Education Resources	Institutional Activity	Mountainair Construction	TOTAL
Dent. Hy., Med. Tech., Nursing & Phys. Ther. . . . . Full-time: 9 hr. or more	RESIDENT	\$ 55.00	\$ 50.00		\$ 96.00	\$ 20.00	\$221.00
	NONRESIDENT	230.00	250.00		96.00	20.00	596.00
Pharmacy & Graduate . . . . . Full-time: 9 hr. or more	RESIDENT	55.00	50.00	\$35.00	96.00	20.00	256.00
	NONRESIDENT	230.00	250.00	180.00	96.00	20.00	776.00
Dentistry & Medicine . . . . . Full-time: 9 hr. or more	RESIDENT	117.00	50.00		96.00	20.00	283.00
	NONRESIDENT	335.00	250.00		96.00	20.00	701.00

## TUITION PER SEMESTER HOUR—PART-TIME & SUMMER (Under 9 hr.)

	Resident	Nonresident
Dental Hygiene, Medical Technology, Nursing & Physical Therapy	\$ 16.00	—Per Credit Hour— \$ 73.00
Pharmacy & Graduate	\$ 22.00	—Per Credit Hour— \$ 82.00
Dentistry & Medicine		plus Special Fees

## Special Fees

Application for Admission (College of Law and Graduate School) .....	\$15.00
Certificate of Advanced Study in Education .....	2.00
Diploma Replacement .....	5.00
Examination for Advanced Standing .....	3.00
Examination for Entrance Credit, per unit .....	1.00
Examination of Candidate for Graduate Degree .....	1.00
(For graduate students not otherwise enrolled at time of final examination.)	
General Educational Development Tests (high school level) .....	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduation .....	10.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Graduate Program Continuance Fee .....	35.00
Late Registration (nonrefundable) .....	10.00
(Not charged to students who complete registration during the regular registration days set forth in the University Calendar.)	
Reinstatement of Student Dropped from the Rolls .....	3.00
Student Identification Card Replacement .....	1.00
Student's Record Fee .....	2.00
(One transcript of a student's record is furnished by the Dean of Admissions and Records without charge. This fee is charged for furnishing an additional transcript.)	

## Summer Fees

Tuition, per semester hour	Resident	Nonresident
Undergraduate students .....	\$11.00	\$54.00
Professional and Graduate students .....	16.00	73.00
Dentistry and Medicine students .....	22.00	82.00
Daily Athenaeum Fee* .....	.90	.90
Radio Station Fee* .....	.90	.90
Health, Counseling and Program Services Fee .....	13.50	13.50
Mountainlair Construction Fee per 6-week summer session or any portion thereof* .....	7.50	7.50
Student Educational Services Fee .....	5.70	5.70
Transportation Fee .....	7.50	7.50

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)

## Classification of Students (Full-Time and Part-Time)

A *full-time professional or graduate student* is one who is registered for 9 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during the summer. A full-time student receives an identification card which entitles the student to admission to certain athletic events. A full-time student during the regular academic year and all students during the summer are entitled to free medical consultation and advice from the University physician. A moderate charge is made for room calls, X-rays, special laboratory tests, drugs



furnished by the University Pharmacy, minor operations, treatment of fractures and dislocations, and intravenous treatment.

A *full-time undergraduate student* is one who is registered for 12 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during a 6-week summer session. A full-time student during the regular academic year receives an identification card which entitles the student to admission to certain athletic events. A full-time student during the regular academic year and all students during the summer are entitled to free medical consultation and advice from the University physician. A moderate charge is made for room calls, X-rays, special laboratory tests, drugs furnished by the University Pharmacy, minor operations, treatment of fractures and dislocations, and intravenous treatment.

For fee assessment purposes, a *part-time professional or graduate student* is one who is registered for fewer than 9 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

A *part-time undergraduate student* is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

## Fees for Off-Campus Courses

Fees for credit hours for off-campus students are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee, the Radio Station Fee, or the Mountainlair Construction Fee.

## Laboratory Fees

Consult specific department sections of this *Catalog* concerning nonrefundable deposits and microscope rental fee.

## Service Charge on Returned Checks

A service charge of 5 percent of the amount of each check returned unpaid by the bank upon which it is drawn shall be collected unless the student can obtain an admission of error from the bank.

If the check returned by the bank was in payment of University and registration fees, the Controller's Office shall declare the fees unpaid and registration cancelled if the check has not been redeemed within three days from date of written notice. In such a case the student may be reinstated upon redemption of the check, payment of the 5 percent service charge, Reinstatement Fee of \$3.00, and Late Payment Fee of \$10.00.

## Refund of Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Comptroller evidence of eligibility for a refund.

To withdraw officially, a student must apply to the Dean of Admissions and Records for permission. Semester fees will be returned in accordance with the following schedule:

First refund period ending on the twelfth day following the beginning of general registration.	} All activity fees chargeable to Special Services and all other semester fees less \$2.50. (Under no circumstances is the amount retained less than \$2.50.)
Second refund period ending on the fifth Friday following the beginning of general registration.	
Last refund period ending on the eighth Friday following the beginning of general registration.	
	} 70% of all refundable fees.
	} 40% of all refundable fees.

The second Friday following the beginning of general registration for a summer session is the end of the refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit, if the call comes before the end of the first three-fourths of the semester, and that the full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however, that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

## Identification Card

An identification card is issued to each full-time student upon paying full fees. It entitles the owner admission to certain University athletic events, various activities of student government, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

## Residential Status for Admission and Fee Purposes

The West Virginia Board of Regents has adopted regulations governing the classification of students as residents or nonresidents for admission and fee purposes at all institutions under its jurisdiction.

**General**—Students enrolling in WVU shall be classified as resident or nonresident for admission, tuition, and fee purposes by the Dean of Admissions and Records. The decision shall be based upon information furnished by the student and all other relevant information. The Dean of Admissions and Records is authorized to require such written documents, affidavits, verifications, or other evidence as are deemed necessary to establish the domicile of a student. The burden of establishing residency for tuition and fee purposes is upon the student.

If there is a question as to residence, the matter must be brought to the attention of the Dean of Admissions and Records and passed upon at least two weeks before registration and payment of tuition and fees. Any student found to have made a false or misleading statement concerning the student's residence shall be subject to disciplinary action and will be charged the nonresident fees for each session theretofore attended.

**Residence Determined by Domicile**—Domicile within the state means adoption of the state as a fixed permanent home and involves personal presence within

the state with no intent on the part of the person to return to another state or country. West Virginia domicile may be established upon the completion of at least twelve months of continued residence within the state before the date of registration, provided that such twelve months of residency is not primarily for the purpose of attendance at any institution of learning in West Virginia.

Establishment of West Virginia domicile with less than twelve months residence before the date of registration must be supported by proof of positive and unequivocal action, such as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established.

**Minors**—Minors are defined by the West Virginia Code (2-2-10) as persons under 18 years of age. The residence of a minor shall follow that of the parents at all times, except in extremely rare cases where emancipation can be proved beyond question. The residence of the father, or the residence of the mother if the father is deceased, is the residence of the unmarried or unemancipated minor. If the father and the mother have separate places of residence, the minor takes the residence of the parent with whom the minor lives or to whom the minor has been assigned by court order. The parents of a minor will be considered residents of West Virginia if their domicile is within the state.

A minor student who is properly admitted to an institution as a resident student shall retain that classification as long as the student enrolls each successive semester.

**Emancipated Minor**—An emancipated minor may be considered as an adult in determining residence, provided satisfactory evidence is presented that neither of the parents, if living, contribute to the minor's support nor claim the minor as a dependent for federal or state income tax purposes.

In the event that the fact of emancipation is established, the emancipated minor assumes all of the responsibilities of an adult to establish residence for tuition and fee purposes. Proof must be provided that emancipation was not achieved principally for the purpose of establishing residence for attendance at an institution of higher education.

**Students 18 Years of Age or Over**—A student 18 years of age or over may be classified as a resident if: (1) the parents were domiciled in the state at the time the student reached majority and such student has not acquired a domicile in another state, or (2) while an adult the student has established a bona fide domicile in West Virginia. Bona fide domicile in West Virginia means that the student must not be in the state primarily to attend an educational institution and the student must be in the state for purposes other than to attempt to qualify for resident status.

Any nonresident student who reaches the age of 18 years while a student at any educational institution in West Virginia does not by virtue of such fact alone attain residence in this state for admission or tuition and fee payment purposes.

A student who is properly classified as a resident at the time of attaining the age of 18 shall continue to be classified as a resident as long as the student enrolls each successive semester and does not establish a domicile, or legal residence, in another state.

**Change of Residence**—An adult student who has been classified as an out-of-state resident and who seeks resident status in West Virginia must assume the burden



of proving conclusively that the student has established domicile in West Virginia with the intention of making the student's permanent home in this state. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements but also by a person's actions. The Dean of Admissions and Records in making his determination shall consider such actions as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established. Factors militating against a change in residence classification may include such considerations as the fact that the student is not self-supporting, that the student is carried as a dependent on the parents' federal or state income tax returns or the parents' health insurance policy, and that the student customarily does not remain in the state when school is not in session.

**Marriage**—The residence of a married person is determined by the same rules of domicile which would apply if he or she were not married.

**Military**—An individual who is on active military service or an employee of the federal government may be classified as a resident for the purpose of payment of tuition and fees provided the individual established a domicile in West Virginia before entrance into federal service, that the individual entered the federal service from West Virginia, and that the individual has at no time while in federal service claimed, or established, a domicile in another state. Sworn statements attesting to these conditions may be required. The wife and dependent children of such individuals also shall be classified as residents of the state of West Virginia for tuition and fee purposes. Persons assigned to full-time active military service and residing in West Virginia may be classified as in-state residents for tuition and fees purposes after twelve months of continuous location in the state.

**Aliens**—An alien in the United States on a resident visa, or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia, may be eligible for resident classification, provided the alien is in the state for purposes other than to attempt to qualify for residency status as a student.

**Appeal Process**—The decisions of the Dean of Admissions and Records may be appealed to the President of WVU. The president may establish such committees and procedures as he determines necessary for the processing of appeals. The decision of the president may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board of Regents.

## Regulations Affecting Degrees

Candidates for degrees are eligible for graduation when they complete the requirements in the college or school in which they are registered which were in effect at the time of their first registration in that college or school, provided they graduate within a period of seven years from the time of their first registration. Students who do not complete the requirements for graduation within seven years from their first registration must meet *all the conditions* of a later *Catalog* — one that will be no more than seven years old by the time they graduate.

If there are major changes in the *Undergraduate Catalog* during the student's course of study, the student does not have to abide by them unless they are promulgated by the Board of Regents, or by local, state, or federal law. However, by choice and with the approval of the adviser and the Dean, a student may meet *all the conditions* of a later *Undergraduate Catalog* than that under which the student first registered in that college or school.

University policy provides that in view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of WVU the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

All degrees are conferred by the Board of Regents upon recommendation of the faculties of the various colleges and schools. A degree is granted at the close of the semester or summer session in which the student completes his/her work.

## Baccalaureate Degrees

### Credits Required

In addition to the University requirements listed in this *Catalog*, each baccalaureate degree is conditional upon the completion of a specified number of semester hours of credit, as determined by the student's degree program requirements. Therefore, students must familiarize themselves with their school and degree program requirements, as given in subsequent pages of this *Catalog*.

### University Core Curriculum

I. Two semesters of English Composition and Rhetoric (Engl. 1 and 2) are required of all candidates for the bachelor's degree in all colleges and schools of the University, unless part or all of the requirement for certain students of superior achievement is waived under regulations prevailing at the time of admission. Such students will be informed of their eligibility by the Coordinator of Writing Programs in English.

II. Remedial work in mathematics to cover the deficiency if the student, upon entering the University, lacks proficiency in mathematics equal to that normally attained in two years of high school mathematics.

III. Twelve credit hours\* of work in selected approved courses in each of the three following areas, including courses in at least two subjects in each group:

#### Group A

1. Art
2. English  
(exclusive of Engl. 1 and 2)
3. Humanities
4. Languages
5. Music
6. Philosophy
7. Religious Studies
8. Selected Multidisciplinary  
Studies
9. Speech Communication
10. Theatre

#### Group B

1. Economics
2. Forestry 140
3. Geography
4. History
5. Minerals 97
6. Political Science
7. Psychology
8. Selected Multidisciplinary  
Studies
9. Social Science
10. Sociology and Anthropology

\*Two 4-credit courses and one 3-credit course may be substituted in lieu of 12 credit hours.

### Group C

- |                     |   |
|---------------------|---|
| 1. Bacteriology     | 9. Mathematics                            |
| 2. Biology          | 10. Nutrition                             |
| 3. Chemistry        | 11. Physical Science                      |
| 4. Computer Science | 12. Physics and Astronomy                 |
| 5. Entomology       | 13. Physiology                            |
| 6. Engineering 111  | 14. Selected Multidisciplinary<br>Studies |
| 7. Genetics         | 15. Statistics                            |
| 8. Geology          |   |

The determination as to whether ROTC courses will be counted toward fulfillment of the Core Curriculum or will be counted as free electives is the prerogative of the department chairperson or dean of the appropriate college or school. This is in keeping with the Board of Regents' orders, effective at the end of the first semester of the 1967-68 academic year, which stipulated that "each academic division of the University must allow at least 8 hours of credit toward graduation for courses in Military Science (ROTC) or Air Force Aerospace Studies (ROTC), if earned during the first two years of enrollment ... A student electing to take Military Science (ROTC) or Air Force Aerospace Studies (ROTC) should consult the student's department chairperson or dean of the student's college or school for determination as to how the 8 hours of academic credit will be credited toward fulfilling graduation requirements."

### Physical Education

Two hours of physical education, to be taken during the first year in residence, are required for graduation, except in the case of students entering with advanced standing amounting to 58 semester hours or more. (See "General Program" in the School of Physical Education section of the *Undergraduate Catalog*.) The University Health Service will determine whether students are physically qualified for required physical education courses and for active participation in other University activities.

### Branch, Community, and Junior Colleges

Seventy-two hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges may not exceed 72 hours. Transfer credit from community colleges and junior colleges is normally limited to lower-division courses.

### Requirements As to Residence

A student who comes to WVU from another college or university should transfer not later than the beginning of the third year. In no case will a student who matriculates in WVU later than October 1 in any year be permitted to receive a degree at the next commencement.

In special cases, students who desire to leave WVU at the close of their third year to enter another institution for the purpose of taking a combined course leading to two degrees or of preparing for graduate study, upon application beforehand to the Committee on Academic Standards of the college or school in which they are registered, may be permitted to do the work of the fourth year, or a part thereof, at such other institution and to receive the bachelor's degree from WVU upon presentation of the proper credits.



The transfer student whose undergraduate work has been altogether in institutions within the West Virginia state system of higher education must complete either the last 30 hours of work, or a minimum of 36 hours including 16 of the last 32 hours in residence. Other transfer students must complete either a total of at least 90 hours or the last 30 hours in residence at WVU. The transfer student may be required to earn up to 15 hours in the major field in residence regardless of the number of hours and the nature of the courses transferred.

## **Work Done Out of Residence**

It is WVU policy to discourage the taking of regular residence courses in absentia. In the case of courses begun at WVU and not completed because of illness or for other acceptable reasons, however, permission to complete the work in absentia under the direction of regular WVU instructors may be granted by the Committee on Academic Standards of the college or school concerned; but in such case credit should be given only upon a report of a grade of no less than C on final examination. This regulation does not apply to WVU off-campus courses.

After a student enrolls on the Morgantown campus, the student must obtain advance approval in writing from the student's adviser and dean and the Dean of Admissions and Records to obtain credit toward a degree for courses offered at other institutions and undergraduate branches of WVU. An overall average of C is required on all work completed at WVU in order to obtain such approval. Transfer credit from schools not affiliated with WVU will be accepted for courses carrying a grade of C or higher when conditions indicated above have been met.

## **Substitution for Required Courses**

A student who desires to substitute another course for any prescribed in the student's curriculum or required for the degree toward which the student is working must obtain permission for such substitution from the Committee on Academic Standards in the student's college or school.

## **Advanced Placement Credit**

West Virginia University encourages students to work to their full capacity and to advance as rapidly as appropriate in their academic work. A number of opportunities are open to both qualified high school juniors and seniors, as well as to adults returning to school after an interval of work or military experience, to demonstrate competence beyond that normally associated with graduation from high school.

High school students who take college-level subjects offered in their schools in cooperation with the College Entrance Examination Board (CEEB) Advanced Placement Program should take the appropriate three-hour examinations administered by the Advanced Placement Service and have the scores sent to WVU. Credit for corresponding WVU courses will be given for high achievement on these tests.

Applicants for admission to the University, especially those who have gained a significant level of maturity through their life experiences, may gain college credit for their educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. Policy of the West Virginia Board of Regents allows University credit to be awarded for successful completion of any or all of the CLEP Subject Examinations, as well as allowing up to 34 hours of general education credit for successful performance on the CLEP General Examinations. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek advanced standing via the CLEP program. Interested applicants may write the Dean of Admissions and Records for further information regarding the CLEP program and WVU credit.

Advanced placement also may be granted for specific military experience. Returning veterans should consult the Dean of Admissions and Records and the WVU Veterans Counselor for details.

After admission to WVU, students may elect to take examinations demonstrating their competence in particular course work. Credit or advanced placement is given for satisfactory completion of the tests. Students interested in challenging courses by examination should consult their advisers for procedures and details.

#### Credit by Examination

Students actively enrolled in WVU may receive credit for courses demonstrating competency in the content covered by a particular course. The department responsible for administering the course will determine the evaluation tools. Where skill and cognitive abilities are components of the course, both will be evaluated. Credit will be given if a satisfactory degree of competency is demonstrated.

A college, school, or department may require students desiring such credit to prepare a self-evaluation statement determining the degree of competency they possess and the methods by which it was achieved.

Students interested in receiving credit for a course by examination should consult the college or school in which the course is offered for procedures and details.

#### Credit for Correspondence Work

Credit up to a maximum of 30 semester hours for work completed by correspondence in nonlaboratory courses will be accepted by WVU when such work is given by accredited colleges or universities that accept work for credit toward their own degrees and whose residence work is accepted by WVU.

#### Second Bachelor's Degree

A student who has received one baccalaureate degree and wishes to receive a second baccalaureate degree must satisfactorily complete enough additional credits earned at WVU and elsewhere, is at least 30 semester hours more than the number required for the first baccalaureate degree; all requirements, departmental and otherwise, of the second baccalaureate degree program must be satisfied. In no case will a second baccalaureate degree be awarded to a student who has met the University residence requirement (see "Requirements As to Residence").

A student who wishes to receive simultaneously two baccalaureate degrees must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. Students desiring to receive simultaneous baccalaureate degrees must be admitted to both programs and provide the Office of Admissions and Records of the college or school approvals in writing. (*Effective Date: Students graduating after August 31, 1979.*)

#### Visitors

Full-time University students may attend classes as visitors, provided they obtain the written permission of their advisers and of the instructors in classes they desire to visit. Members of the administrative or teaching staffs, or other regular employees of the University, may attend classes as visitors provided they obtain written permission of the chairperson of their departments and of the instructors in the classes which they desire to visit.

No credit is given for work in such classes. Such persons may not obtain credit by advanced standing examinations in courses attended as visitors.

## Auditors

Students may enroll in courses without working for grade or for credit by registering as auditors and by paying full fees. Change in status from audit to credit or from credit to audit may be made during the registration period. Attendance requirements for auditors shall be determined by the instructor of the course being audited. It is the prerogative of the instructor to strike the name of any auditor from grade report forms and to instruct the Office of Admissions and Records to withdraw the auditor from the class, if attendance requirements are not met.

## Summer Sessions

There are two summer sessions, each of six weeks duration. The first session begins approximately the middle of May and ends June 30. The second session begins July 1, and ends the second week of August. Requirements for admission and character of the work offered are the same for the summer sessions as for the regular academic year.

Credit may be obtained toward the bachelor's, master's, and doctorate. Offerings are varied from summer to summer so that students may complete work for the master's degree by attending summer sessions only.

For complete information, see the *WVU Summer Session Bulletin*.

## Grade-Point Average

All academic units of the University require minimum standards of scholastic quality. Grade points are computed only on grades earned at WVU and at other institutions in the West Virginia state system of higher education. To be eligible for graduation, a student must have a grade-point average of 2.0 (C) or higher on all work for which the student receives grades (except W, WU, and P). In addition, specific degree programs may require minimum grades of C, or in some cases higher than C, in specific courses or portions of the baccalaureate program.

It is the student's responsibility to keep informed of the student's grade-point standing. This information may be obtained at any time from the dean of the college or school in which the student is registered.

## Graduation with Honors

The University recognizes distinguished academic achievement by awarding initial baccalaureate degrees *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude*, to qualified students. The following regulations govern these awards:

1. Grade-point averages for graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be computed by starting with the student's penultimate semester or summer session and continuing in reverse chronological order until at least 80 semester hours, excluding credits earned with a grade of P or S, have been counted. If, in order to total the required number of hours it is necessary to include any part of a semester or summer session, the work of the whole semester or session shall be included.

2. Students who transfer to WVU may be eligible for graduation with honors based on the computational system stated above.

3. Subject to the above conditions, all candidates for a baccalaureate degree whose grade-point average is 3.80, or higher, shall be graduated *Summa Cum Laude*. Those whose average is lower than 3.8, but equal to or higher than 3.60, shall be graduated *Magna Cum Laude*. Those whose average is lower than 3.60, but equal to or higher than 3.40, shall be graduated *Cum Laude*.



4. Fitting recognition of graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be made on the candidate's diploma and in the Commencement Program.

(This policy will be effective for all students whose first enrollment in an institution of higher education is on or after May 15, 1979.)

## Examinations and Reports

### Courses

As a rule courses extend through one semester only, although some are of a year's duration. No credit will be given for less than an entire course except by special order of the Committee on Academic Standards. Grades given at the end of the first semester in courses extending throughout the year are merely indicative of the quality of work done by the student to that point and do not give credit for the part of the course so far completed. Such first-semester grades may be considered in determining the final grade, however.

Summer courses carry the same credit value as courses offered in regular semesters.

### Evaluation of Student Progress

Measurement and evaluation of learning, consistent with the objectives of the course, provide opportunity for the student and the teacher to evaluate progress through a variety of methods. Evaluation by final examination alone is discouraged.

Students are responsible for all material presented or assigned in scheduled instructional sections. Failure to complete all assigned work may result in a report of I or a grade of F at the discretion of the instructor.

Final examinations are held during the last two days of each summer semester of the academic year and during the last two days of each session. A listing in the *Schedule of Courses* each semester sets the time for final examinations.

The only tests permitted during the week of classes preceding finals will be in evening classes, practical laboratory tests, make-up examinations, and regularly scheduled short quizzes.

### Absence from Examinations

The student is required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor shall count the examination as zero and report the final grade as F. If, in the opinion of the instructor, absence of the student was for satisfactory reason, the grade of I may be reported.

A student who has been absent because of illness, authorized University activities, or other reasons approved by the student's dean, has the opportunity to make up regularly scheduled examinations.

### Grade Reports

In the seventh week of classes of each semester, instructors in all undergraduate courses shall submit a report of students doing unsatisfactory work; that is, earning grades of D or F. These grades are used for counseling and are not recorded on the student's permanent record in the Office of Admissions and Records. These reports are sent to the Dean of Admission and Records or a representative and this

information is transmitted to the student, parent or guardian, adviser, and dean of the college or school.

Final grades are reported by instructors directly to the Office of Admissions and Records within 48 hours after the closing of the examination.

The final standing of all seniors provisionally approved for graduation at the close of the second semester shall be reported by their instructors to the deans of their colleges and schools, and the final standing of all graduate students provisionally approved for graduation shall be reported to the Dean of the Graduate School. Special report cards are supplied by the Dean of Admissions and Records.

A report of each student's work is made at the close of the semester or summer session to the student or to the student's parents or guardian.

## Grading, Absences, Academic Standing, Suspension, and Withdrawals

### Grading System

- A — excellent (given only to students of superior ability and attainment)
- B — good (given only to students who are well above average, but not in the highest group)
- C — fair (average students)
- D — poor but passing
- F — failure
- I — incomplete
- W — withdrawal before the end of the fifth week of a semester or withdrawal doing satisfactory work thereafter
- WU — withdrawal doing unsatisfactory work (after the fifth week of a semester)
- P — pass (see Pass-Fail Grading below)
- X — auditor, no grade and no credit
- CR — credit but no grade
- PR — progress. Final grade at end of the second semester (Medical Center)
- S — Satisfactory
- U — Unsatisfactory (equivalent to F) } in certain approved graduate courses

### Pass-Fail Grading

The basic purpose of pass-fail grading for undergraduates at WVU is to promote the undertaking of elective courses unrelated to the student's fields of degree concentration. A secondary purpose of pass-fail grading is to facilitate student grading in performance or competency based courses which may be an integral part of the student's program.

*Student Option.* Any full-time student who has completed 15 hours and maintains a 2.0 grade-point average may elect to take a maximum of 4 hours each semester or each summer session in which the grade earned will be either P (pass) or F (fail). The courses taken for pass-fail grading must be free electives and shall not exceed a total of 18 hours of credit. Unless otherwise indicated, excluded are courses in the student's major, courses in other subjects that are required by the major, and courses taken to satisfy either University, college, or school requirements. For example, courses elected to satisfy the physical education, English, Core, or foreign language requirements may not be taken for pass-fail grading.

The student electing the pass-fail grading option will be graded as a regular student and the appropriate letter grade submitted to the Office of Admissions and Records. The Office of Admissions and Records shall convert the earned letter grade to P-F on the basis of A, B, C, or D for a pass, and F for a fail.

The selection of a course for pass-fail grading must be made at registration and may not be changed after the close of the registration period.

*College or School Option.* A department or unit may designate any performance or competency based course which, with approval of the college or school and the University Senate, may be offered exclusively as P-F. Such courses offered only as P-F shall not be included in the maximum of 18 hours that may be freely elected under the student option.

(This revised policy became effective as of the beginning of the First Semester, 1977-78, for grading under the *Student Option*.)

## Grade Points

Grade points are based on the following grade-point values for each semester of credit:

A	B	C	D	F	I	U
4	3	2	1	0	0	0

The grade-point average is computed on all work for which the student has registered with the following exceptions:

- (a) Courses with W, WU, P, S, and X.
- (b) If an undergraduate student earns a grade of D or F in any course at WVU taken no later than the semester or summer session registration when a cumulative total of 58 hours has been attempted, and if this course is repeated in residence at WVU, one time only, the lower grade shall be disregarded for the purpose of determining the student's grade-point average, hours passed and hours attempted, and the higher grade earned for this course shall be used in determining the student's grade-point average, hours passed and hours attempted. The first grade recorded shall not be deleted from the student's record and the second grade will be entered marked repeat, in the semester when taken. The repeat shall be completed no later than the semester or summer session registration when a cumulative total of 70 hours has been attempted. (*Effective Date:* For students enrolled for the first time at West Virginia University for a session after May 15, 1979.)

Provided, however, that when a student receives a grade of I and later removes the incomplete grade, the average grade-point standing shall be calculated on the basis of the new grade.

If the final grade of a student in any course is F, the student must take the course again in residence at WVU if the student desires to receive credit for it, unless the dean of the college or school authorizes the exception. The grade of I is given when an instructor believes that the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within the following semester or the next semester in which the student is in residence, and becomes a failure unless special permission is granted by the appropriate Committee on Academic Standards to postpone removal.

For teacher certification the student is responsible for every registration in a course for which a grade of A, B, C, D, F, WU, P, or I is received.

## Absences

Students who are absent from class for any reason are responsible for work missed.



Students should understand that absences may jeopardize their grades or continuance in the course.

Instructors who use absence records in the determination of grades must announce this fact to students (in writing) within the first five class meetings.

It is the responsibility of the instructor to keep an accurate record of all students enrolled.

Instructors may report excessive absences to the student's dean or adviser.

Students who have been absent because of illness, authorized University activities, or other reasons approved by their deans, have the opportunity to make up regularly scheduled examinations.

## Probation, Suspension, Reentry Policy

### Uniform Probation

Any undergraduate student whose cumulative average is 2.0 or higher is in good academic standing in the University. Every baccalaureate degree requires a minimum grade-point average of 2.0 for graduation. (Nothing in this statement prevents a unit from requiring a minimum grade-point average above 2.0, or other academic requirements.)

Students whose cumulative grade-point average is below 2.0 will be notified on semester grade reports that their academic performance is unsatisfactory. Such students may be subject to probation by the dean of their college or school. Students are not on probation until notified, in writing, by their dean, who will establish the terms of their probation.

### Uniform Academic Suspension Regulations

The student whose cumulative grade-point deficiency exceeds the "allowable grade-point deficiency" (see Table) is subject to suspension. Normally, students will be suspended only at the end of the academic year; students exceeding the maximum allowable grade-point deficiency at other times may be put on probation or otherwise warned. However, nothing in this provision shall prevent a dean from suspending a student at any other time of the year if the student's grade-point deficiency exceeds the allowable maximum.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Action on academic suspension is to be taken by the appropriate dean at the end of each semester and such action is to be based on a special report from the Dean of Admissions and Records. The sequence of events in bringing about this action is:

1. The Dean of Admissions and Records will forward a special report at grade-reporting time to the college or school deans for appropriate action.

2. The Dean of Admissions and Records will provide the Vice-President for Academic Affairs with a list of students subject to suspension in each college or school.

3. Deans will report to the Vice-President for Academic Affairs the action taken on the students reported to them for academic suspension by the Dean of Admissions and Records.

Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University

**MAXIMUM ALLOWABLE GRADE-POINT DEFICIENCY\***

<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>	<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>
0-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	7
50-54	13		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia System of Higher Education excluding grades of P, exclusive of the D-F Repeat Policy.

for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester, but will not exceed one calendar year from the date of suspension.

Students who have been suspended may petition the Committee on Academic Standards of the college or school to which they wish to be readmitted in care of the dean. The normal periods for consideration of petitions are October 1-November 15 and March 1-April 15 of each academic year.

A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU upon readmission to the University. After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met.

#### **Readmission After Suspension**

During the semester immediately following the effective date of suspension, suspended students may petition in writing for readmission. The college or school petitioned shall establish the terms of readmission for successful student petitioners.

After one calendar year from the effective date of suspension any student who has been once suspended shall, upon written application, be readmitted to the University, with the terms of readmission to be established by the college or school entered by the readmitted student.

A suspended student who is readmitted under the provisions above will be placed on academic probation and will be subject to the maximum grade-point deficiency regulations as before, unless the terms of probation agreed to by the student require otherwise. Each college or school will have the right to establish minimum levels of performance expectations.

(Effective: August 15, 1980, for all students.)

## Withdrawals

### Withdrawal from Class

Until Friday of the tenth week of classes (or, in the case of summer school, until two-thirds through the session), a student may withdraw from part of the course work by obtaining the adviser's signature on the University course withdrawal form and submitting the completed form to the Office of Admissions and Records. A deadline will be printed in the University Calendar each semester. No withdrawal will be permitted after the deadline.

A student is responsible for determining (with the adviser's help):

1. Whether the course load is reduced below the minimum requirements set by the college or school;
2. Whether the course load is reduced below the minimum number of hours required for financial aid or athletic eligibility;
3. Whether the course dropped is required to fulfill an academic probation condition;
4. Whether the course dropped is corequisite or prerequisite to another course the student is taking or a prerequisite to a course required by the student's curriculum the following term.

A student who withdraws before the established deadline shall receive a grade of W.

### Withdrawal from University

A student who desires to withdraw from WVU must obtain a withdrawal form from the Office of Student Educational Services (or dean's office of an off-campus instructional unit). Withdrawal procedure will be explained at that time. A student may withdraw from the University up to and including the next to the last day of regular classes as established by the University Calendar.

A student who desires to leave WVU must officially withdraw in accordance with this policy. The student who fails to follow the established policy may incur severe penalties (e.g., a grade of F in each course for which the student is registered and/or suspension from the University).

It is the student's responsibility to see that all financial obligations are met and that all forms required for withdrawal from the University are properly executed and delivered to the appropriate authorities. The withdrawal becomes official only after the appropriate forms have been recorded by the Dean of Admissions and Records.

### Re-Enrollment After Withdrawal

An undergraduate student who withdraws from WVU in two consecutive semesters (excluding summer session) may not register for further work without approval of the dean of the college or school in which the student wishes to register and subject to conditions set by that dean.

## Advisers, Committee on Academic Standards

### Advisers

Each student entering WVU is assigned an adviser whose duty is to assist students in preparing schedules, assign them to classes, and certify their study lists to the Dean of Admissions and Records. The adviser is expected to give such advice and sympathetic guidance as the students may need in their work at the University. Students are expected to go freely to their advisers to discuss problems.



Advisers, upon receipt of reports of excessive numbers of absences, shall have conferences with the student concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, the case shall be reported to the dean of the college or school.

## Committee on Academic Standards

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

## Cheating

### Procedural Rules for Handling Cheating Cases

The academic development of students and the overall integrity of the institution are primary responsibilities of West Virginia University. Cheating is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

### Responsibilities

Students should act to prevent opportunities for cheating to occur, and in such a manner to discourage any type of cheating.

Faculty are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and security officers, shall promptly report each known case of cheating to the appropriate supervisor, department chairperson, or dean of the college or school concerned.

### Cheating Defined

Cheating is defined to include any of the following:

1. Obtaining help from another student during examinations.
2. Knowingly giving help to another student during examinations.
3. The use of notes, books, or any other source of information during examinations, unless authorized by the examiner.
4. Obtaining without authorization an examination or any part thereof.

5. Plagiarism: submitting for credit, without appropriate acknowledgment, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been knowingly obtained or copied in whole or in part from another individual's academic composition, compilation, or other product, or commercially-prepared paper.

6. Altering, or causing to be altered, the record of any grade in a grade book, office, or other record.

7. Taking an examination or doing academic work for another student, or providing your own work for another student to copy and submit as his/her own.

8. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.

### Procedure for Handling Cheating Cases

*Step 1.* At the discretion of the student, faculty member, and chairperson of the department, some cases involving cheating where there is an admission, in writing, of guilt by the student may be satisfactorily resolved at the departmental level. The maximum penalty at Step 1 is an "F" in the course. Whenever a penalty is administered, the facts of the case shall be reported in writing to the dean of the college or school, and a copy forwarded to the Dean of Student Educational Services for the Dean's permanent records. In cases wherein cheating occurs in a college or school other than that in which the student is a degree candidate, the results of the case shall be reported to the dean of the college or school in which the student involved is enrolled.

*Step 2.* When the student denies guilt, or the faculty member or department chairperson feels the penalties available at Step 1 are insufficient for specific act, the dean of the college or school in which the course is offered shall be notified in writing of the specifics of the case. The dean shall then implement the following steps:

a. Formal notification to the student of the charges and the nature of the evidence, which if proved would justify action.

b. Opportunity for the student and witnesses to respond in writing, rebutting the charges.

c. Opportunity for the student to request that the case be forwarded by the dean to the West Virginia University Student Discipline Committee (Step 3).

d. If the student admits guilt in a signed statement to the dean, or is found guilty, the dean shall prescribe the penalty deemed appropriate. Allowable penalties for Step 2 include "F" in the course, written reprimand, and probation. The dean shall promptly report thereon in writing to the President of the University and shall at the same time place a copy of such report in the permanent record of the student concerned and forward another copy to the Dean of Student Educational Services for his records. A copy of such report will also be forwarded to the dean of the college or school in which the student is enrolled. The purpose of this copy of the report is to provide information in the event that further discipline or penalty may be deemed warranted by the dean of the college or school in which the student is a degree candidate. These records will be maintained by the deans until the student graduates, at which time the records will be destroyed.

e. The dean shall have the prerogative to refer any first-offense cheating case to the West Virginia University Student Discipline Committee. If the cheating allegation is a second offense, it shall be referred automatically to the West Virginia University Student Discipline Committee (Step 3) for action under its guidelines.

*Step 3.* The West Virginia University Student Discipline Committee shall handle cases on cheating referred by a dean or requested by a student. The case must be heard using the Committee on Student Discipline guidelines. If the Student Discipline Committee finds the student guilty of cheating, it will recommend the penalty it deems

appropriate under the circumstances to the President of the University and to the appropriate deans. Allowable sanctions in these cases include, but are not limited to, probation, suspension, or expulsion.

### Appeal

The student may appeal to the President of the University any and all decisions of a dean, department chairperson, or Student Discipline Committee, in accordance with standard operating procedures as spelled out in the President's statement on due process of January 29, 1971. Appeals in regard to decisions made by the University's President may be taken to the Board of Regents.

### Criminal Act in Connection with Cheating

If a student admits in writing that he/she has been guilty of cheating, or is found guilty of cheating by the Student Discipline Committee, in a case involving what is believed to be a criminal offense—such as theft of an examination or test materials, alteration of records, forgery, breaking or entering buildings, offices, desks, safes, or filing cabinets, damage to property, and other similar misconduct—the academic penalties and discipline as herein prescribed shall be applied. In addition the facts of the case will be presented to the appropriate prosecuting attorney for further investigation and for such criminal or other action as may be warranted.



# Medical Center Basic Sciences— Programs and Courses of Instruction

The Department of Anatomy, Biochemistry, Microbiology, Pharmacology and Toxicology, and Physiology offer individual graduate programs leading to the M.S. and Ph.D. degrees and provide courses for students of medicine, dentistry, pharmacy, nursing, and other allied health professions.

(Detailed information concerning Graduate School academic information is presented in Part 2 of the *WVU Graduate School Catalog*.)

## Anatomy

The Department of Anatomy offers graduate programs which are committed to the training of competent researchers and capable teachers. This is accomplished by the completion of a carefully designed plan of study tailored to the individual student's interests. The program begins with instruction in basic morphological, developmental, and functional aspects of human anatomy. Additional related course work and electives are required. These selected courses strengthen the area of interest of the student. The student then conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.).

## Admission Requirements

In addition to the admission procedure of the Graduate School, the Department of Anatomy requests that each applicant complete a departmental application form, obtained from the department. After an application is favorably reviewed by the departmental Graduate Committee, applicants are invited for a personal interview whenever practical. The applicant is admitted by a majority vote of the departmental faculty.

It is recommended that the following courses be completed before entering the graduate program: algebra, trigonometry, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology, and two years of French, German, or Russian. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants who desire consideration for financial aid should complete the application process before January 15.

## Doctor of Philosophy

The first year of study is usually occupied with required course work within the Department of Anatomy. These courses include gross anatomy, microanatomy, neurobiology, introduction to research, and seminar in anatomy. Required courses in other basic medical sciences, such as biochemistry and physiology, are usually taken in the second year. Twelve hours of additional graduate-level courses are also required. These requirements will have been satisfied when the student earns a grade of at least B in each of the courses taken in the Department of Anatomy and has maintained a 2.75 overall grade-point average as required by the Graduate School.

To be admitted to candidacy for the Ph.D. degree the student must satisfy the above requirements, demonstrate a reading knowledge of one foreign language, pass a written and oral comprehensive preliminary examination, and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree each student must complete a dissertation based on original research and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an Advisory Committee, which is composed of faculty members selected by the student.

The student often culminates the training period with presentations at regional and/or national scientific meetings. The Southern Society of Anatomists and the American Association of Anatomists are the most suitable meetings for this purpose.

## Master of Science

The master's program in Anatomy is offered as a terminal degree only for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D.

An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy plus 6 to 9 hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work the student must complete a thesis based on original research and defend the thesis at an oral examination.

## Research and Instruction

*Research Areas*—Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues, and organs, under normal and experimental conditions with *in vivo* microscopic, histochemical, electron microscopic, autoradiographic, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration and the effects of drugs and other environmental agents on development. Neuroanatomy: Experimental, comparative, and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

## Anatomy (Anat.)

101. *Principles of Human Anatomy*. (For paramedical students only.) I. 3-4 hr. PR: Biol. 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.
102. *Gross Anatomy*. (For physical therapy students.) II. 3 hr. PR: Anat. 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck.
103. *Microanatomy*. (For physical therapy students.) I. 2 hr. PR: Consent of instructor or chairperson. Introductory cell and tissue structure.
109. *Oral Histology*. (For dental hygiene students.) II. 3 hr. PR: Consent of instructor or chairperson. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.
152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent of instructor or chairperson. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture. (*Same as Sociology and Anthropology 152.*)

301. *Gross Anatomy of the Trunk*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum.
302. *Gross Anatomy of the Head and Neck*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 3 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the head and neck.
304. *Gross Anatomy of the Extremities*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the upper and lower extremities.
305. *Microanatomy*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 4 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the back, upper extremities, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy*. (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system. (See also CC MD 375, Neurobiology.)
309. *Microanatomy and Organology*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 4 hr. PR: Dental student standing or consent of chairperson. Cells, tissues, and organs.
312. *Special Topics in Anatomy*. I, II. 2-4 hr. per sem. PR: Anat. 301 or 306; and Anat. 305 or 309; consent of chairperson. Different topics of current interest in anatomy that are not included in the regular graduate courses.
314. *Applied Anatomy*. I, II. 2-6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.
318. *Oral Histology and Embryology*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.
401. *Advanced Gross Anatomy*. I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 306, 307 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.
402. *Advanced Developmental Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301, 302, 304, and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar*. I, II. 1-6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.
405. *Experimental Embryology*. II. (Alternate Years.) 3 hr. PR: Embryology and cellular physiology or biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. (Course may be repeated.) PR: CC MD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. (Alternate Years.) 3 hr. PR: Anat. 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.



451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent of instructor or chairperson. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
491. *Advanced Anatomy*. I, II. 2-8 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Committee.)

## Biochemistry

Graduate programs in the Department of Biochemistry are designed to assist students in the development of their own capabilities for independent thought and research. All students are provided with a strong biochemistry background; however, the program has sufficient flexibility to allow individual students to select advanced specialty courses in biochemistry which are of particular importance to their career goals. Faculty research problems are of current interest and are diverse, reflecting the broad spectrum of areas encompassing biochemistry. Specific major areas of research in the Department of Biochemistry include: elucidation of specific mechanisms of enzyme catalysis; protein conformation changes induced by metals; cytochrome P-450 oxidative processes; characterization of immune complement interaction with red cell membranes; investigations into microbial infection processes; membrane alteration during differentiation in the cellular slime mold; hormonal regulation of animal cell metabolism; control of secretory processes; tRNA synthesis and maturation; regulation of mammalian cell growth; control of eukaryotic DNA syntheses; carcinogenesis; nutritional biochemistry; and structural aspects of connective tissue.

## Admission Requirements

A prospective graduate student should hold a bachelor's degree with a science major and should have successfully completed the following courses in qualitative-quantitative, chemical analysis, organic chemistry, calculus, physics, and physical chemistry. In some cases, a deficiency in the above may be made up after admission to the program.

Application is made by submission of the following items to the Department of Biochemistry: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's present abilities and potential; (c) official transcript of the applicant's college grades; and (d) official copy of Graduate Record Examination (GRE) scores. Due to the sequence of courses, entrance in the fall is preferred; but exceptions may be made as necessary. Application material and program details may be obtained by writing: The Graduate Coordinator, Department of Biochemistry, School of Medicine, West Virginia University, Morgantown, WV 26506. The deadline for receipt of applications and supporting documents by the department is June 1; to be considered for financial support, applications should be submitted much earlier, preferably by February 1.

## Doctor of Philosophy

To insure that all students become familiar with the basic principles of biochemistry, the first year of the Ph.D. program is primarily devoted to course work. In addition to formal courses during the first semester, students participate in a laboratory program which involves all faculty members. This laboratory experience is designed to illustrate the basic research skills involved in biochemistry. During the second semester, students will undertake research in at least two laboratories of their choice. During the first two years, the students also are given monthly cumulative examinations, designed to assure the faculty that the students are developing a

working knowledge of the field of biochemistry appropriate to a doctoral candidate. Students are required to pass nine cumulative examination questions during this period.

Upon successful completion of the first year, students will choose a thesis research adviser, at which time emphasis will be placed on research under the direction of the research adviser. During the second year, specialized courses in biochemistry will be offered as the students continue their research programs. During subsequent years, the students emphasize independent thesis research, hence few formal courses are taken.

An essential component of the Ph.D. program is participation in departmental journal clubs and seminars. Both students and faculty participate, thus students learn to effectively organize and present research material to a large group of people.

Completion of the Ph.D. program is realized when the student successfully presents the results of his/her research to both the Department of Biochemistry and a graduate advisory committee. Typically, four years are required to realize this goal.

## Master of Science

The Department of Biochemistry offers two types of master of science degrees. The non-thesis master's degree is designed to be completed in one year. It emphasizes course work with little laboratory research. The thesis master's degree involves completion of a master's research project in addition to formal course work. The program for this degree is essentially identical to that for the Ph.D. program; however, only six cumulative examination questions must be passed.

## Research and Instruction

*Research Areas*—Hormonal regulation of hepatic carbohydrate metabolism. Enzyme kinetics. Lipid metabolism and biogenesis of membranes. Structure and function of transfer RNA; RNA synthesis in mammalian cells. Atherosclerosis. Physical chemistry of proteins. tRNA methyltransferases in normal and tumor systems. Influence of nutrition on tissue protein and amino acid metabolism. Chemistry of host-parasite relationship. Interaction of macromolecules in biological systems. Physical biochemistry. Nutritional oncology. Immunochemistry. Mechanism of enzyme action. Role of hormones on secretory mechanisms.

## Biochemistry (Bioch.)

139. *Introduction to Biochemistry*. I. 4-5 hr. PR: Inorganic chemistry. (For pharmacy and medical technology students; others by consent.) Lecture and conference, 4 hr.; Laboratory, 1 hr.
192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a maximum of 12 hr.) PR: Consent.
231. *General Biochemistry*. I. 7 hr. PR: Inorganic chemistry, organic chemistry. (For medical students and limited number of regular full-time graduate students in basic sciences departments with consent of the Chairperson of Biochemistry.) Lecture, conference, and demonstration.
239. *Clinical Chemical Techniques*. II. 4 hr. PR: Bioch. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)
305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, organic chemistry, and consent. (Dental and graduate students.) Lecture, conference, and demonstration.
423. *Immunochemistry*. II. 2 hr. PR: Consent. Chemistry and biochemistry of antibodies, antigens, and complement.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Designed primarily to provide a background for students who will do research in biochemistry and molecular biology. Emphasis will be on basic principles and concepts useful for the solution of important biological problems.

496. *Graduate Seminar*. I, II. 1 hr. PR: Bioch. 231 or equiv.; consent. Presentation and discussion of special topics.
497. *Research*. I, II, S. 1-15 hr.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

### Conjoined Basic Sciences Courses (CC MD)

320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
350. *Radiation Safety and Isotope Usage*. II. 1-2 hr. PR: Phys. 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; ERDA (formerly AEC) and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
370. *Medical Genetics*. (For medical and limited number of graduate students.) II. 1 hr. PR: Consent. Genetics and heritable diseases in man.
375. *Neurobiology*. (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of medical curriculum. (Graded as S or U.) The selective program for fourth-year medical students offers a wide range of opportunities in the basic sciences, medical specialties and subspecialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the Charleston Division, WVU Medical Center; the Wheeling Division, School of Medicine; and the Veterans Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans the individual program, with faculty advice. Flexibility is permitted. With consent of the instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See intramural and extramural folders, published annually, that describe the selective opportunities.)

## Microbiology

The Department of Microbiology offers programs of study leading to the degrees of Master of Science and Doctor of Philosophy in Medical Microbiology. Students are given extensive training in microbiological research methodology. The program aims towards training students capable of designing and carrying out their own research programs and teaching microbiology.

### Admission Requirements

Applicants should have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics—including calculus—in order to be considered for admission. Applicants must submit to the Department of Microbiology a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores—both aptitude and advanced. In addition, transcripts and an official application for admission to the Graduate School must be sent directly to the WVU Office of Admissions and Records. Applicants for admission



to a degree program should have a grade-point average of 3.0, or better, and a score of 600, or above, on each of the GRE examinations. Early application is encouraged. Applicants desiring financial aid should complete their application before January 1.

## Program Requirements

Every student must take a two-semester sequence in basic microbiology (M. Bio. 310 and 311) and two semesters in biochemistry. Seminar is a required course for all students each semester that they are in residence. All students in the Department of Microbiology are also required to participate in teaching at least one semester a year. The remaining courses are selected by the student and the advisory committee from courses in microbiology numbered M. Bio. 317 or higher, and from outside the department.

The Department of Microbiology also has informal noon-hour journal clubs scheduled four days a week, one each in cell biology, immunology, virology, and bacteriology and parasitology.

The Master of Science program requires 30 hours of course work, of which at least 20 hours must be in microbiology. Six hours must be in research. A research thesis and a final oral examination are required. A grade-point average of at least 3.0 must be achieved. In general, two years are needed to complete the M.S. program.

The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation, and passing of qualifying and final oral examinations. Appropriate course work with a grade-point average of 3.0 is also required. Where appropriate, course work in related subjects such as calculus, physical chemistry, and statistics will be required. Three years are usually needed to complete the Ph.D. program.

For additional information, write to the Chairperson, Department of Microbiology, WVU Medical Center, Morgantown, WV 26506.

## Research and Instruction

*Research Areas*—Pathogenic Bacteriology: mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: nutrition and metabolism of a variety of pathogenic microorganisms. Genetics: basic studies on the mechanisms of genetics including transfer of genetic information. Virology: basic studies on viral-tumor relationships; virus-induced antigens in transformed cells; pathogenesis of lymphocytic choriomeningitis virus. Parasitology: host-parasite relationships between helminth parasites and insects and vertebrate hosts. Electron Microscopy: cytological studies of the fine structure of microorganisms and the influence of environment on these structures. Immunology: studies on the mechanisms of antigen-antibody reactions and the development of hypersensitivity; immunopathology of pulmonary disease; immunogenetics of lymphocytes; mechanisms of cellular immunity. Other programs: detection of environmental pollutants; effect of environmental agents on host resistance.

## Microbiology (M. Bio.)

- 26. *Microbiology*. (For students in the paramedical sciences.) I. 4 hr.
- 220. *Microbiology*. (For pharmacy students.) II. 4 hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
- 223. *Microbiology*. (For medical technology students; graduate students with consent.) II. 5 hr. PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.

224. *Parasitology*. (For medical technology students.) II. 4 hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
301. *Microbiology*. (For medical students only.) I. 5-7 hr. PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms. Emphasis on use of microbiology in solving clinical problems.
302. *Microbiology*. (For dental students only.) I. 5 hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR or Conc: Biochemistry; consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. Life cycles of a few model systems. (Students may enroll for one to three portions of the course.)
311. *Principles of Infection and Resistance*. II. 1-5 hr. PR or Conc.: Biochemistry; consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students may enroll for one to five portions of the course.)
317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available.
327. *Parasitology*. (For graduate students.) II. 4 hr. PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*.

*Pathogenic Virology*. I. 3 hr. PR: M. Bio. 310 and 311 or equiv., consent. Pathogenesis of medically important viruses and mechanisms for their control.

*Pathogenic Bacteriology*. II. 3 hr. PR: M. Bio. 311, consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease.

*Clinical Laboratory Bacteriology*. I, II. 2-4 hr. PR: M. Bio. 311 or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. Laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)

*Microbial Genetics*. I. 4 hr. PR: M. Bio. 310 or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models. (*Course will not be offered in 1980-81.*)

*Bacterial Physiology*. II. 2 hr. PR: M. Bio. 310, biochemistry, consent. The physiology and metabolism of bacteria of medical, industrial, and ecological importance. (*Course will not be offered in 1980-81.*)

*Immunobiology*. II. (Alternate Years.) 2 hr. PR: M. Bio. 311, consent. Discussion of the biological and cellular aspects of immunology. Immunobiology, immunopathology, and cellular immunology receive strong emphasis. (This course is designed to complement Bioch. 491.) (*Course will not be offered in 1980-81.*)

*Medical Mycology*. I. 4 hr. PR: M. Bio. 311 or equiv. Advanced study of the fungi of medical importance, including the pathobiology of mycoses and toxicoses. (*Course will not be offered in 1980-81.*)

*Comparative Cytology*. II. 4 hr. PR: Consent. Limited enrollment. Basic features in structure and function of animal, plant, and microbial cells and their organelles. Projects in electron microscopy.

*Cell and Molecular Biology of Eukaryotes*. II. 2-6 hr. PR: Consent. Interdepartmental team-taught course. Modular approach: (1) overview and cell growth; (2) membrane structure and function; (3) tumor biology. In alternate years, the three modules offered are (1) above and (4) somatic cell genetics and chromosome structure; and (5) hormone action and gene expression.

*Tumor Virology*. II. 3 hr. PR: Biol. 315 or equiv., consent. A consideration of the molecular and biochemical aspects of viruses which cause tumors and the mechanisms by which they cause cellular transformation.

*Clinical Laboratory Virology*. S. 3 hr. per 6-week session. PR: Consent. Lectures and laboratories on isolation of viruses from clinical specimens. Includes serological methods.

496. *Seminar*. I, II. 1 hr. PR: M. Bio. 310 or equiv. (Graded as S or U.)

497. *Research*. I, II, S. 1-15 hr. PR: M. Bio. 310 or equiv. Students may enroll more than once. (Graded as S or U.)

## Pathology

*Research Areas*—Atherosclerosis; thrombosis; platelet aggregation and function; lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electronmicroscopic) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; biomedical application of laboratory medicine; applied laboratory studies in microbiology.

### Pathology (Path.)

128. *Introduction to General Pathology*. I. 2 hr. PR: Enrollment in dental hygiene or physical therapy. A study of the basic pathologic processes in man.

129. *Oral Pathology*. II. 3 hr. PR: Path. 128, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.

328. *General Pathology*. (For dental students and certain graduate students with consent of the chairperson.) I. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.

350. *Hematology*. 3 hr. PR: Consent.

351. *Pathology and Laboratory Medicine*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) I, II. 15 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systemic approach to disease states.

353. *Oral Pathology II*. I. 2 hr. PR: Path. 338; consent. Continuation of Path. 338.

355. *Clinico-Pathologic Correlation Conference*. (For dental students, third year.) II. 1 hr. PR: Path. 338, 353; consent. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.

356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 and 354; consent. Microscopic and gross specimens from selected autopsies.

382. *Advanced Oral Histopathology*. I, II. 1-2 hr. PR: Path. 338, 353; consent. Microscopic study of head and neck lesions.

401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar of independent study of local and/or systemic disease processes affecting oral and facial structures.

497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology and Toxicology

Pharmacology and Toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the



degrees of Master of Science and Doctor of Philosophy, with research concentrations in such areas as autonomic pharmacology, biochemical pharmacology, neuropharmacology, psychopharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, pharmacogenetics, malarial chemotherapy, and toxicology.

## Admission Requirements

Regular applicants for the graduate program in pharmacology and toxicology should present as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; five semesters of chemistry including two semesters of organic chemistry and one semester of physical chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination—including the advanced test in either chemistry or biology—are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write: Director of Graduate Studies, Department of Pharmacology and Toxicology, WVU Medical Center, Morgantown, WV 26506.

## Master of Science

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is recommended as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project. The course work requirements for the M.S. in pharmacology and toxicology usually consist of Physiology 344 and 345, Biochemistry 231, Statistics 311, Pharmacology and Toxicology 361, 363, 364, 461, 462, and 497. Some students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research to date before taking either the written or the oral Ph.D. qualifying examinations.

## Doctor of Philosophy

Before official admission to candidacy for the doctorate, the student must satisfactorily complete both a written examination and an oral comprehensive qualifying examination. The written examination is generally taken during the sixth semester in the program (not counting summers) on or about March 1. The student will generally have some choice as to questions which must be answered. Two days (6 hours a day) are generally required to complete the written examination. When a student has successfully passed the written examination, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department—is appointed and constitutes the oral examining body. The oral portion of the qualifying examination is held not less than two nor more than six weeks after the successful completion of the written examination.

## Dissertation

Upon admission to candidacy for the degree of Doctor of Philosophy, the candidate must select a topic for the dissertation under the direction of the candidate's adviser, complete a dissertation that makes a contribution to knowledge in the

candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

## Research and Instruction

*Research Areas* — Autonomic pharmacology; autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release and metabolism of transmitters and adrenal medullary hormones. Chemotherapy: Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: Biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system. Toxicology: Metabolism of toxic agents, pulmonary toxicology, environmental toxicology, perinatal pharmacology and toxicology. Electron microscopy: Effects of drugs on the ultrastructure of cells.

## Pharmacology and Toxicology (Pcol.)

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
242. *Pharmacodynamics and Therapeutics II*. (For pharmacy and graduate students.) I. 6 hr. PR: Phar. 240 or consent. Continuation of Phar. 240.
360. *Pharmacology*. (For dental and graduate students.) I. 4 hr. PR: Dental student standing or consent. Lecture and demonstrations on pharmacologic actions and therapeutic uses of drugs.
361. *Pharmacology*. (For medical students and a limited number of regular, full-time graduate students in medical basic sciences departments.) II. 6 hr. PR: Consent of department chairperson. Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
363. *Toxicology*. II. 3 hr. PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on biochemical and molecular mechanisms of chemical toxicity.
364. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology including physiochemical properties, absorption, distribution and metabolism of drugs, drug receptor theory, and molecular mechanisms of toxicity. (*Offered Every Third Year.*) (*Course will be offered in 1980-81.*)
365. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of specialized areas of pharmacology and toxicology including biochemical, endocrine, pulmonary, and cardiovascular pharmacology. (*Offered Every Third Year.*)
366. *Advanced Pharmacology (Laboratory in Drug Evaluation)*. S. 1-3 hr. PR: Consent. Laboratory procedures and demonstrations in assessing drug action.
367. *Advanced Neuropharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures on the actions of drugs on the central and peripheral nervous system. (*Offered Every Third Year.*)
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pcol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology and toxicology. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.

490. *Teaching Practicum*. I, II. 1-2 hr. per sem. PR: Pcol. 361 and consent. Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology and toxicology. (For advanced graduate students.)
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. (Study may be independent or through specially scheduled lectures.)
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology

The objective of the Department of Physiology graduate program is to educate physiologists in the methods of conducting independent research of high quality and of effective teaching. The department's graduates are conversant with all aspects of physiology and are prepared to interact creatively with scientists in related fields. To this end the program leading to the degree of Doctor of Philosophy emphasizes close interaction of faculty with students and a high faculty/student ratio. The Master of Science program includes 24 hours of course work and a research project leading to the thesis.

## Admission Requirements

Individuals from a wide variety of backgrounds study physiology as one of the basic medical sciences. It is, in fact, not uncommon to find physiologists with such diverse backgrounds as biology, chemistry, physics, psychology, engineering, and mathematics. The department encourages the participation of qualified individuals from many undergraduate and graduate disciplines. There are, however, certain prerequisite courses a student must take either before enrollment or during the first year of the program. These prerequisites, designed to give a student the proper foundation for advanced study in physiology, are: Biology (2 semesters), Physics (2 semesters, calculus-based desirable), Calculus (2 semesters, 3 desirable), and Organic Chemistry (1 semester). Physical Chemistry is not required, but is desirable.

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, a completed departmental application form, and Graduate Record Examination scores (aptitude and one advanced test). A bachelor's degree or equivalent is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs may be obtained by writing to the Graduate Adviser, Department of Physiology, West Virginia University School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as June of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

## Doctor of Philosophy

The first year in the program normally includes the following courses: Medical Physiology (10 hours), Biochemistry (7 hours), Statistics (3 hours), Neurophysiology (3 hours) or Neurobiology (6 hours), Graduate Colloquium (2 hours), Physiological Methods (variable credit), electives, and prerequisites (a limited number of which may be made up during the first year). The first-year curriculum familiarizes the student with some of the same basic sciences material presented to the medical students. Medical physiology, biochemistry, and neurophysiology/neurobiology are part of the medical curriculum. The courses are team-taught by scientists specializing in each of the areas covered. In addition, the student is introduced to the full range of activities in



the department through the Graduate Colloquium. Physiological Methods provides a foundation in the research strategies, techniques, and tools used by physiologists.

During the first summer, students may begin research projects in departmental research laboratories of their choice. They also may take elective courses or make up prerequisites.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses normally include: Advanced Physiology (12 hours), Graduate Colloquium (2 hours), Seminar (2 hours), and Teaching Practicum (assisting in laboratory/demonstrations, conducting small-group conference sessions, giving lectures). Commonly chosen electives include pharmacology and toxicology, and advanced or specialized topics in biochemistry. The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. Students begin to present discussions of research topics in the Graduate Colloquium and Seminar.

After completion of the second academic year, the student takes a qualifying examination consisting of a written comprehensive part and both a written and oral research design part. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy in Physiology.

During the third and fourth years the student may enroll in elective courses. Yearly participation in the Teaching Practicum provides experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research, with presentations about the research in the Graduate Colloquium. During these years the students will attend and present papers at national meetings of scientific societies (American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences.) The Ph.D. program is generally completed in four years.

## Master of Science

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first academic year and first summer are likewise identical for the master's and doctoral students. During the second year of the master's program, the student enrolls for 6 hours of Advanced Physiology, Graduate Colloquium, and sufficient electives to fulfill the required 24 hours of course work. In addition, 6 hours of research are directed toward completion of the thesis. The M.S. program is usually completed in two years.

## Research and Instruction

*Research Areas*—Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, neural, renal, and respiratory physiology.

## Physiology (Physi.)

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lec., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relations to normal physiology.

248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lec., 2 lab.
341. *Physiological Methods I*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology. (Designed to be taken in conjunction with Physi. 345.)
342. *Physiological Methods II*. I. 1-4 hr. PR: Consent. Research techniques and strategies for physiology. (Designed to be taken in conjunction with Physi. 344.)
343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lec., 1 conf., 1 lab.
344. *Medical Physiology*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 5 lec., 1 conf.-lab.
345. *Medical Physiology II*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 5 hr. PR: Physi. 344 and consent of department chairperson. Continuation of Physi. 344. 5 lec., 1 conf.-lab.
346. *Neurophysiology*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 3 hr. PR: College algebra, physics, and consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 2 lec., 1 conf.
347. *Biophysical Analysis*. II. (Alternate Years.) 4 hr. PR: Math. 17 and Physi. 345 or consent. Systems biophysics, method of analysis, and their application in the quantitative study of biological phenomena. 3 lec., 1 conf.-seminar.
399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate status and consent. (Graded as S or U.)
447. *Systems Biophysics*. II. (Alternate Years.) 4 hr. PR: Physi. 347 or consent. Quantitative analysis of physiological regulatory systems. 2 lec., 2 conf.-seminar.
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.
497. *Research in Physiology*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1-6 hr. PR: Consent. (Graded as S or U.)

# School of Dentistry

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Dental auxiliary careers such as dental hygiene may be pursued. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

The School of Dentistry of West Virginia University offers programs of education leading to the degrees of Doctor of Dental Surgery, Master of Science with majors in Endodontics and Orthodontics, and Bachelor of Science in Dental Hygiene. One oral surgery internship and two oral surgery residencies are offered by the Department of Oral Surgery. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Four general practice residencies are offered by the School of Dentistry and University Hospital. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by an associate dean, two assistant deans, and the clinical and medical center basic sciences chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of the University.

## Doctor of Dental Surgery Program

The School of Dentistry offers a program of education leading to the degree of Doctor of Dental Surgery (D.D.S.). The requirements for admission and the curriculum conform to the standards established by the American Dental Association Commission on Accreditation of Dental and Dental Auxiliary Educational Programs.

## Admission

*Application for admission in the Fall of 1981 should be made promptly upon completion of the 1979-80 school year, even if the applicant has not completed all the requirements as listed.*

*The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry in the Fall of 1981, is November 1, 1980. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet and thus should be reviewed carefully by the applicant. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.*

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding*



*nonresident applicants will be considered.* Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

Each applicant is required to satisfactorily complete the Dental Admission Test. It is suggested that the test be taken in April, before making application in June, for admission in the fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisite courses should include:

*Sem. Hr.*

English Composition and Rhetoric, or equivalent .....	6
Zoology or Biology (with laboratory) .....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

All applications are reviewed and those most qualified are required to appear for a personal interview. The Committee on Admissions will advise the applicants of the time and place of the interview.

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements as stated above, appropriate completion of all application instructions, submission of all transcripts from each college attended, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding admission enrollment).

*Final acceptance of a student is contingent upon satisfactory completion of all requirements.*

## Promotion

At the close of the school year, the status of each student is reviewed by the appropriate Committee on Academic Standards, which then reports to the Dean and Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat a year, or be suspended from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the Dean and Faculty Council.

Unconditional promotion normally depends upon the fulfillment of all course requirements, and the attainment of certain minimum standards of academic achievement. These requirements provide for: a minimum grade-point average of 1.5 for promotion to the second year; a minimum cumulative grade- point average of 1.75 for promotion to the third year; a minimum cumulative grade-point average of 2.0 for promotion to the fourth year; and a cumulative grade-point average of 2.0 for graduation. Outstanding students may be considered for graduation upon completion of the third summer session.

## Requirements for Degree

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.

2. Shall have completed the prescribed curriculum for each of the academic sessions.

3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.

4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

Attendance at the spring Commencement is voluntary. If you don't plan to attend, leave the complete mailing address to where you want your diploma mailed at the Dean's office.

## Curriculum

The School of Dentistry recognizes its obligation to produce professionals capable of meeting the dental health needs of society and providing leadership for the dental profession. Therefore, the school offers a four-year program leading to the degree of Doctor of Dental Surgery that provides students with a learning environment in which to develop the technical competence, intellectual capacity, and professional responsibility necessary to meet the dental health needs of a society in a state of constant transformation. In order to insure the achievement of these goals, the dental curriculum is continually reviewed and revised.

The basic required courses in the curriculum are presented throughout the first six semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general practice track, basic biologic science track, and specific clinical interest track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. Fourth-year students are required to register for at least 3 hours of electives during each semester enrolled and must register for those clinical courses requiring added clinical experience to attain competency.

At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and at the same time serve as a means of encouraging students to continue their education throughout their professional careers.

# SCHOOL OF DENTISTRY CURRICULUM PLAN

	First Year (1,200 hr.)	Summer Session (320 hr.)	Second Year (1,200 hr.)	Summer Session (320 hr.)	Third Year (1,200 hr.)	Summer Session (320 hr.)	Fourth Year (1,200 hr.)
				Basic Dental Science	Basic Biologic Science	Bio-Clin. Sci. Comm. Dent.	
100		Basic Dental Science	Basic Biologic Science	Bio-Clinical Sciences			
				Comm.Dent.			
200	Basic Biologic Science			Clinical Dentistry	Bio-Clinical Sciences	Clinical Dentistry	
		Bio-Clinical Sciences					
		Clinical Dentistry	Basic Dental Science	Unsched.		Unscheduled Time	Electives and Clinical Dentistry
300		Unsched.					
400					Comm. Dent.		
500							
600	Basic Dental Science		Bio-Clinical Sciences		Clinical Dentistry		
700							
800			Comm. Dent.				
900	Bio-Clinical Sciences		Clinical Dentistry				
	Comm. Dent.						
000	Clinical Dentistry						Unscheduled Time
	Unscheduled Time		Unscheduled Time		Unscheduled Time		
100							
200							



The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairman and the Assistant Dean for Instruction. The student will pursue the approved curriculum through completion of the D.D.S. program.

As a part of the curriculum, fourth-year students are required to participate in mock board examinations.

All students are required to receive at least six weeks of clinical training in the School of Dentistry's extramural program. Students must complete satisfactorily all courses attempted.

Outstanding students having an accumulated grade-point average of 3.0 or above, having developed competency in all clinical disciplines, and having met all other requirements are eligible for consideration for graduation at the end of the third eight-week summer session.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and renders a much needed service to several thousand patients annually.

## Books and Instruments

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses.

## Organizations

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

*Dental Fraternities.* Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta

Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

## Courses of Instruction in Dentistry (Dent.)

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Assistant Dean for Instruction.

### Community Dentistry

Professor McCutcheon (*Chairperson*); Adjunct Associate Professor Murphy; Associate Professors Ingersoll, Jagannathan, Pawlicki, and Seime; Assistant Professor Meckstroth; Visiting Educational Specialist Hutton; Clinical Associate Professor Wilson; Clinical Assistant Professors Abrams and Dice; Clinical Instructors Kuhn, Taylor, and Wright.

- 315. *Community Dentistry 2*. II. 3 hr. A course encompassing the study of professional communication and the introduction to the theory and practice of preventive dentistry.
- 320. *Community Dentistry 1*. II. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
- 326. *Community Dentistry 3*. II. 2 hr. A course covering the principles of human behavior and their application to understanding patient problems, patient management, and dentist-patient communication.
- 330. *Community Dentistry 4*. II. 1 hr. Lectures and field experience provide the student with the basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
- 332. *Community Dentistry 5*. S. 1 hr. A course providing lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition and microbiology.
- 352. *Community Dentistry 6*. I, II. 2 hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
- 354. *Community Dentistry 7*. II. 1 hr. PR: Departmental consent. Lectures covering the origin and development of dentistry.
- 394. *Community Dentistry 8*. I, II. 1-15 hr. Continued field experience in various aspects of community health.

### Dental Anatomy

Associate Professor VandenBosche; Assistant Professors Foor and Rodeffer; Instructor Hurst.

- 310. *Dental Anatomy and Occlusion*. I. 4 hr. Anatomy of individual teeth, both permanent and primary, in regard to form and function and their static and dynamic occlusal relationships.

### Dental Practice Management

Professors Puderbaugh (*Chairperson*) and Thomas; Assistant Professors Boaz, Hickman, Mitchell, and Walker; Adjunct Assistant Professor Crowe; Instructor Hurst; Lecturer Cady.

- 325. *Practice Management 1*. II and S. 2 hr. (Dental Auxiliary Utilization.) Designed through didactic and clinical experience to prepare dental students in the concepts of four-handed dentistry.

# SCHOOL OF DENTISTRY COURSE SCHEDULE

	1st. Sem.	2nd. Sem.	S.	Third Year	1st. Sem.	2nd. Sem.	S.
<b>First Year</b>							
300—Anesthesiology			x	350—Removable Prosthodontics (5)	x		x
303—Oral Diagnostic Techniques		x		352—Community Dentistry (6)	x	x	
304—Operative Dentistry (1)		x		353—Oral Oncology	x		
305—Biochemistry		x		354—Community Dentistry (7)			x
306—Gross Anatomy (Trunk and Extremities)		x		355—Clinical Pathology Correlation Conference			
307—Gross Anat. (Head and Neck Neuroanatomy)		x		357—Fixed Prosthodontics	x	x	x
309—Microanatomy and Organology	x			358—Operative Dentistry (5)	x	x	x
310—Dental Anatomy and Occlusion	x			359—Oral Surgery (2)	x	x	
311—Periodontics (1)			x	360—Pharmacology	x		
312—Dental Materials	x			361—Pedodontics (3)	x	x	x
313—Removable Prosthodontics (1)	x			362—Endodontics (3)	x	x	x
314—Fixed Prosthodontics (1)				363—Periodontics (3)	x	x	x
315—Community Dentistry (2)			x	364—Oral Diagnosis (2)	x	x	x
316—Removable Prosthodontics (2)		x		365—Clinical Orthodontics (1)	x	x	x
318—Oral Histology and Embryology	x		x	367—Clinical Oral Roentgenology (1)	x	x	x
320—Community Dentistry (1)	x			371—Dental Practice Management (2)	x	x	x
321—Endodontics (1)			x	372—Dental Practice Management (Ethics) (3)	x		
322—Operative Dentistry (2)			x	373—Dental Practice Management (4)	x	x	x
323—Clinic Orientation			x	374—Principles of Medicine (4)	x		
<b>Second Year</b>				<b>Fourth Year</b>			
301—Microbiology				375—Dental Practice Management (5)	x	x	
325—Dental Practice Management (1)	x		x	376—Removable Prosthodontics (6)	x	x	
326—Community Dentistry		x		377—Periodontics (4)	x	x	
327—Oral Roentgenology	x	x	x	380—Endodontics (5)	x	x	
328—General Pathology	x			382—Advanced Oral Histopathology (Elective)	x	x	
329—Operative Dentistry	x			383—Operative Dentistry (6)	x	x	
330—Community Dentistry (4)				384—Oral Surgery (3)	x	x	
332—Community Dentistry (5)		x		385—Clinical Orthodontics (2)	x	x	
333—Physical Diagnosis (1)			x	386—Pedodontics (3)	x	x	
334—Removable Prosthodontics (3)	x	x	x	387—Oral Diagnosis (3)	x	x	
335—Pedodontics (1)	x	x		389—Fixed Prosthodontics (4)	x	x	
336—Fixed Prosthodontics (2)	x	x	x	394—Community Dentistry (8)	x	x	
337—Oral Diagnosis (1)	x		x	395—Hospital Dentistry (5)	x	x	
338—Oral Pathology		x	x	396—Clinical Oral Roentgenology	x	x	
339—Oral Surgery (1)		x	x	397—Special Topics*	x		
340—Periodontics (2)	x	x	x				
341—Removable Prosthodontics (4)			x				
342—Endodontics (2)	x	x	x				
343—Fundamentals of Physiology	x						
345—Principles of Orthodontics							
346—Orthodontics Technics			x				
347—Management of Medical Emergencies (2)		x	x				
348—Operative Dentistry (4)	x	x	x				

\*See Courses of Instruction in Dentistry.



371. *Practice Management 2.* Yr. and S. 4 hr. PR: Dent. 325. Fundamentals of practice management, including organization and development of the practice, personnel and financial management, introduction of TEAM dentistry, continuation of clinical practice using auxiliaries, including those trained in expanded functions.
372. *Practice Management 3.* II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.
373. *Practice Management 4.* II. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
375. *Practice Management 5.* I, II. 1-2 hr. PR: Dent. 371. Continuation of clinical practice using auxiliaries, including those trained in expanded functions.

## Dental Materials

Professors Overberger and Gaver; Associate Professor Weaver; Assistant Professor Hart.

312. *Dental Materials.* I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics.* (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Endodontics

Professors Alberico, Biddington, and Griffin; Associate Professor Skidmore (*Chairperson*); Instructors Baur, Funderburk, Stewart and Swartz.

321. *Endodontics 1.* S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
342. *Endodontics 2.* Yr. and S. 1 hr. Minor clinical endodontic procedures which will stress the application of principles presented in Dent. 321.
362. *Endodontics 3.* Yr. and S. 2 hr. PR: Dent. 321, 342. Lectures on rationale, diagnosis, prevention and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae; also correlating and applying the basic biological and basic dental sciences in the treatment of pulpal and periapical disease.
380. *Endodontics 4.* I and II. 1-2 hr. Continued clinical endodontics stressing the diagnosis and treatment of endodontic problems.
390. *Clinical Endodontics.* I, II, S. 1-5 hr. (*May be repeated for credit.*) PR: Graduate of an accredited dental school and admission to the Advanced Educational Program in Endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory.* I, II, S. 1 hr. (*May be repeated for credit.*) PR: Graduate of an accredited dental school and admission to the Advanced Educational Program in Endodontics or consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
397. *Special Topics.* (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Hospital Dentistry

Professors Knapp, Lapp, Waldman, and Welch (*Chairperson*); Clinical Professor Moorman; Assistant Professors Bakos and Mitchell; Clinical Instructors Coffman, Cogan, Courtney, Fagan, Farris, Hancock, Patthoff, Payne, Snyder, and Wilbourne.

- 333. *Physical Diagnosis 1*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
- 347. *Management of Medical/Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
- 349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.
- 374. *Principles of Medicine 4*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.
- 395. *Hospital Dentistry Practicum*. I, II, S. 1-15 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in Dent. 349.

## Operative Dentistry

Professors Sausen (*Chairperson*) and Gaver; Associate Professors Chapman, VandenBosche, and Weaver; Assistant Professors Foor, Frye, Gladwin, Hart, Jackson, Kelly, Naylor, Rodeffer, and Utt; Instructor Mason.

- 304. *Operative Dentistry 1*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Gold inlay technique introduced. Characteristics and treatment of caries emphasized.
- 322. *Operative Dentistry 2*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Preparation is made for entering clinical activity. Certain fundamentals of pedodontics introduced.
- 329. *Operative Dentistry 3*. I. 2 hr. Initiation of clinical practice with comprehensive examinations and treatment planning of assigned patients. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.
- 348. *Operative Dentistry 4*. Yr. and S. 3 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Clinical practice is expanded, and includes a significant number of gold restorations.
- 358. *Operative Dentistry 5*. Yr. and S. 3 hr. More complex and advanced techniques for clinical practice and new developments throughout the scope of operative dentistry. Clinical practice expanded to provide experience in all classifications of restorative procedures.
- 383. *Operative Dentistry 6*. I and II. 2-4 hr. Clinical experience course in which additional cases are treated to improve upon efficiency and finesse. Sufficient variety and depth of experience is obtained to reach adequate competence for independent practice of operative dentistry.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Diagnosis and Radiology

Professors Graham (*Chairperson*) and Thomas; Assistant Professors Bowers, Pifer, and H. Smith.

- 303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive health care.
- 323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.
- 327. *Oral Radiology*. I. Yr. and S. 1 hr. Physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
- 337. *Oral Diagnosis I*. Yr. and S. 2 hr. Didactic instruction with further application of diagnosis procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
- 364. *Oral Diagnosis 2*. Yr. and S. 1 hr. Clinical application of principles presented in Dent. 337.
- 367. *Clinical Oral Radiology I*. Yr. and S. 1 hr. Clinical application of principles presented in Dent. 303 and 327.
- 387. *Oral Diagnosis 3*. I and II. 1-2 hr. Continued clinical experience providing opportunities for further independent observation and analysis of clinical problems.
- 396. *Clinical Oral Radiology 2*. I and II. 1-2 hr. Additional clinical experience in oral roentgenology.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Pathology

Associate Professor Bouquot (*Chairperson*); Assistant Professor Keyes; Instructor Gnepp.

- 338. *Oral Pathology I*. (For dental students.) II. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
- 353. *Oral Pathology II*. (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Continuation of Dent. 338.
- 355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
- 382. *Advanced Oral Histopathology*. (For dental and graduate students, residents and interns.) II. 1 hr. PR: Consent; Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
- 401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents and interns.) I, II, S. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.



## Oral Surgery

Professor Campbell; Associate Professor Graves (*Chairperson*); Clinical Professor Moorman; Clinical Associate Professor Davidson; Assistant Professor Van Sickels; Clinical Assistant Professors Salzer, Syner, and Wine; Visiting Lecturer Wallace.

300. *Anesthesiology*. II and S. 1 hr. Introduction to general anesthesia; lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.
339. *Oral Surgery 1*. II and S. 2 hr. Didactic instruction and clinical experience in basic surgical principles as applied to the extraction of teeth, including classification and techniques for the surgical removal of impactions.
359. *Oral Surgery 2*. Yr. and S. 3 hr. PR: Consent. Didactic instruction in diagnosis and surgical and adjunctive treatment of diseases, injuries, and defects of human jaws and associated structures. Practical training obtained by assignments in the oral surgery clinic and in University Hospital.
384. *Oral Surgery 3*. I and II. 2-4 hr. Continuation course in oral surgical procedures including additional experience in the hospital environment.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations and clinical applications.

## Orthodontics

Professor Merow (*Chairperson*); Associate Professor Moore; Clinical Associate Professor Bonello; Assistant Professors Dempsey, H. E. Martin, Tatich, Valentine, and Wilfong; Visiting Lecturers Caveney, Eckley, Jarrett, and Schindler.

345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
365. *Clinical Orthodontics 1*. Yr. and S. 2 hr. Case analysis, treatment planning, clinical practice, and seminars concerning interceptive, preventive, and adjunctive treatment of malocclusions.
385. *Clinical Orthodontics 2*. I and II. 1-2 hr. Continuing clinical management of selected malocclusion problems.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Pedodontics

Professor Nash (*Chairperson*); Associate Professor Johnson; Assistant Professors Fenton and Gwynn; Instructors Hagan and Nicholson.

335. *Pedodontics 1*. I and II. 2 hr. PR: Consent. Didactic instruction foundational to the dental care to children presented in the following modules of instruction: growth and development, behavior management, oral diagnosis/treatment planning/case presentation, prevention, restorative dentistry, pulpal therapy, management of the development occlusion and trauma to the dentition and oral structures.
361. *Pedodontics 2*. II. 1 hr. PR: Consent. Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: treatment planning considerations and applications, abnormal dental development, oral habits, and dental care for handicapped children.

386. *Pedodontics 3*. I, II, S. 1-5 hr. Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Periodontics

Professor Morrison (*Chairperson*); Assistant Professors Hornbrook and Wanker; Instructors Oliver and Taylor.

311. *Periodontics 1*. S. 1 hr. Histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis and treatment planning. Laboratory instruction on correct periodontal instrumentation.
340. *Periodontics 2*. Yr. and S. 3 hr. Didactic and clinical instruction on diagnosis and treatment of periodontal diseases, including occlusion and selective grinding techniques.
363. *Periodontics 3*. Yr. and S. 2 hr. Didactic and clinical instruction correlating periodontics with all other areas of dentistry with continued clinical diagnosis and treatment of periodontal diseases.
377. *Periodontics 4*. I and II. 1-2 hr. Continued and additional clinical experience in clinical diagnosis and treatment of periodontal disease.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Fixed Prosthodontics

Professors Adams (Emeritus), Bianco (*Chairperson*), and Tucker; Associate Professors Kwiatkowski and Ladwig; Instructors Bramble, Crowder, Smith, and Wild; Visiting Lecturer Simpson.

314. *Fixed Prosthodontics 1*. S. 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
336. *Fixed Prosthodontics 2*. Yr. 5 hr. Lectures and laboratory exercises on principles and technics of crown and bridge prosthodontics. Types of dental bridges, their indications, and contraindications.
357. *Fixed Prosthodontics 3*. Yr. and S. Lectures and procedures employed in clinical practice. Types of dental bridges, their indications, and contraindications.
389. *Fixed Prosthodontics 4*. I and II. 2-4 hr. Clinical practice of crown and bridge prosthodontics. Emphasis on problems related to diagnosis and construction of more complex dental bridges.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Maxillofacial Prosthodontics

Professor Bianco (*Chairperson*); Associate Professor Kluth; Assistant Professor Lee.

397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Removable Prosthodontics

Professors Bianco (*Chairperson*), DeCounter, and Somers; Assistant Professors Harper, Roth, and VanRiper; Instructors Camele, Lacy, and Roth; Visiting Lecturer DiNapoli.

313. *Removable Prosthodontics 1.* I. 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.
316. *Removable Prosthodontics 2.* S. 1 hr. Lectures and laboratory practice in maxillo-mandibular relationships and occlusion.
334. *Removable Prosthodontics 3.* Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.
341. *Removable Prosthodontics 4.* S. 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.
350. *Removable Prosthodontics 5.* Yr. and S. 4 hr. Lectures and general clinical practice in complete and partial removable prostheses.
376. *Removable Prosthodontics 6.* I and II. 2-4 hr. Continued clinical practice in various and special removable prosthodontic procedures.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Advanced Education Programs

The School of Dentistry offers advanced education programs. The Department of Endodontics and the Department of Orthodontics offer programs of advanced study leading to the degrees of Master of Science. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Pharmacology and Toxicology, and Physiology. (See pages 34-47 of this *Catalog* or Part 4 of the *Graduate School Catalog*.) The Department of Oral Surgery offers one oral surgery internship and two residencies. Four general practice residencies also are offered by the School of Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Advanced Education Programs.

## Endodontic Program

### Master of Science

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry and is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be processed in the School of Dentistry and will be recommended to the Graduate School for admission. Applicants approved for admission to the program will be notified soon after January 15.

### Requirements for Admission to the Endodontic Program

1. Graduation from an accredited school of dentistry.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the Department of Endodontics all information requested in the departmental application form.



## Requirements for Master of Science Degree

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to endodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 57 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (7 hours).
6. Must have demonstrated satisfactory clinical competency in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## Dentistry (Dent.)

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

## Endodontics (Dent.)

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: Ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 1 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
490. *Endodontic Teaching*. S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.
497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

## Microbiology (M. Bio.)

310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR: Consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. (Students can enroll for one to three parts.)
311. *Principles of Infection and Resistance*. I. 1-5 hr. PR: Consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students can enroll for one to three parts.)

## Pathology (Path.)

382. *Advanced Oral Histopathology*. I, II. 1-2 hr. PR: Consent. Microscopic study of head and neck lesions.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

## Pharmacology and Toxicology (Pcol.)

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.

## Statistics (Stat.)

311. *Statistical Methods I*. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (*Equiv. to Ed. P. 311 and Psych. 311.*)

## Orthodontic Program

### Master of Science

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of 24 months (two academic years and two summers) of full-time residency in the School of Dentistry, and is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be recommended to the Graduate School for admission. Those applicants approved for admission to the program will be notified soon after January 15.

### Requirements for Admission to the Orthodontic Program

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the department all information requested in the department application form.

### Requirements for Master of Science Degree

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summers) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 50 credit hours. These include 35 hours of orthodontic courses, a minimum of 9 hours of selected basic sciences subjects, a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## Anatomy (Anat.)

314. *Applied Anatomy*. II. 2-6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.
491. *Advanced Anatomy*. I, II. 2-8 hr. PR: Consent of chairperson.

## Orthodontics (Dent.)

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.
419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.

420. *Cephalometrics*. I, II, S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
423. *Growth and Development*. I, II, S. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
497. *Research*. I, II, S. 1-15 hr.

### Pathology (Path.)

401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar of independent study of local and/or systemic disease processes affecting oral and facial structures.

### Statistics (Stat.)

311. *Statistical Methods I*. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chisquare distributions, analysis of variance and multiple comparisons. (*Equiv. to Ed. P. 311 and Psych. 311.*)

## Dental Hygiene Program

The Dental Hygiene Program is a department of the School of Dentistry. The four-year dental hygiene curriculum combines the advantages of both a liberal arts and a professional education. This curriculum format has departed from the conventional, but there is a definite conviction that the inclusion of many disciplines provides greater strength to the program. The educational objectives of the Dental Hygiene Program are:

To prepare individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers of those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States. Presently, these services include: observation, recording, prevention, treatment, education, and communication.

To prepare individuals capable of performing the clinical skills delegated to any dental auxiliary (excluding the dental laboratory technician).

To prepare dental hygienists to teach clinical skills and to present didactic information in dental auxiliary education programs.

To prepare individuals capable of performing coordinative and administrative functions in public health and community related areas.

To prepare individuals for the dental hygiene profession who have a keen sense of social awareness and professional responsibility.

To prepare dental hygienists to continue their professional development past graduation through formal training, self-study, and independent thought.

To prepare individuals who have the capability to understand and adapt to new developments and changes in the scientific, sociologic, and practical factors pertaining to health.



To provide the educational foundation for higher education.

Upon completion of all requirements and with the recommendation of the School of Dentistry, the candidate is awarded a bachelor of science degree in Dental Hygiene.

The Dental Hygiene curriculum is structured in accordance with the standards specified for a Dental Hygiene Program by the Commission on Accreditation of the American Dental Association. The program has been fully accredited by this organization since 1965.

## Admission

Students enter dental hygiene as freshmen, and the general admission policies of West Virginia University are followed. The applicant must be a graduate of an accredited high school or preparatory school and have completed one unit of algebra, one unit of geometry, four units of English, biology, and chemistry. Good grades are expected, and applicants should rank in the upper one-third of their graduating class. Particular attention is given to academic achievement in science courses.

The American College Testing Program (ACT) examination is required of high school applicants. A high school counselor can supply information concerning this examination. The Dental Hygiene Aptitude Test is required of every applicant. A brochure with detailed information and instructions about this test is mailed with application materials or may be obtained by writing the American Dental Hygienists' Association, 211 East Chicago Ave., Chicago, IL 60611.

In addition to a special application form for dental hygiene, each candidate for admission is supplied with three standardized reference forms. Each applicant is requested to have these individuals return the forms directly to the Department of Dental Hygiene.

The personal qualifications, scholastic record, test scores, and recommendation of each applicant are reviewed by the Dental Hygiene Admissions Committee. After reviewing these credentials, the committee will request an interview with those applicants who are most qualified. The applicant will be notified by letter of the date, time, and place of the interview.

The competition for entrance into dental hygiene is extremely keen. *Nonresidents should recognize that preference is given to West Virginia residents. Only those nonresidents with the highest qualifications will be considered.*

For application materials the applicant should write to the Department of Dental Hygiene, West Virginia University, or the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. Applicants should apply and complete aptitude tests as early as possible in the year preceding the year admission is desired. Applications are available in September and are not accepted after March 1.

## Promotion

At the end of each semester, the status of each dental hygiene student is reviewed by the Dental Hygiene Committee on Academic Standards. This committee then makes recommendations to the Dean. Final disposition in each case is the prerogative of the Dean and the Chairperson of Dental Hygiene.

Unconditional promotion normally depends upon fulfillment of all course requirements and the attainment of both a minimum cumulative grade-point average and a minimum science-dental hygiene grade-point average. These minimum grade-point averages are: a 1.50 for promotion to the second year; a 1.75 for promotion to the third year; a 2.0 for promotion to the fourth year; and a 2.0 for graduation. The courses (or equivalents) utilized to calculate the science-dental hygiene grade-point average are:

Chemistry 11  
 Chemistry 12  
 Anatomy 101  
 Pathology 128  
 Pathology 129  
 Microbiology 26  
 Physiology 141  
 Pharmacology 160  
 Anesthesiology 300

Dental Hygiene 1  
 Dental Hygiene 2  
 Dental Hygiene 66  
 Dental Hygiene 85  
 Dental Hygiene 90  
 Dental Hygiene 105  
 Dental Hygiene 120  
 Dental Hygiene 125  
 Dental Hygiene 150  
 Dental Hygiene 152

Dental Hygiene 154  
 Dental Hygiene 155  
 Dental Hygiene 168  
 Dental Hygiene 169  
 Dental Hygiene 172  
 Dental Hygiene 174  
 Dental Hygiene 202  
 Dental Hygiene 205  
 Dental Hygiene 206

Students who do not qualify to be promoted unconditionally may be placed on probation or may be suspended from further studies in the Department of Dental Hygiene. Probationary status implies that the student will be allowed to make up deficiencies or be given an opportunity to repeat a year.

If a student is promoted on probation, the student must reach the required minimum standards specified above. Students on probation who do not obtain these standards will be reevaluated by the committee.

The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Professional Organizations

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of student membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

*American Association of Dental Schools.* This association of dental educational institutions and faculties has as its primary purpose to promote and improve dental education. Dental hygiene students may join as student members.

*West Virginia University School of Dentistry Alumni Association.* Graduates of the Department of Dental Hygiene may join and participate in all activities of the Alumni Association.

## Courses of Instruction in Dental Hygiene

Associate Professor Komives (*Chairperson*); Assistant Professors Boaz, Crystal, DeBiase, Frere, Graves, Kaplan, and Krouse; Instructor Taylor (part time); School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this *Catalog* or the *WVU Undergraduate Catalog*.)

### Dental Hygiene (Dnt. Hy.)

1. *Orientation to Dental Hygiene.* I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
2. *Introduction to the Dental Specialties.* II. 3 hr. PR: Dnt. Hy. 1 or consent. Survey of functions and responsibilities of each of the dental specialties. Emphasis on the role of the dental assistant and dental hygienist in each type of practice.
66. *Technical Expression and Dental Literature.* I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.
85. *Oral Anatomy.* II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.

# DENTAL HYGIENE CURRICULUM PLAN

First Year				Second Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Engl. 1	3	Engl. 2	3	Anat. 101	4	Physi. 141	4
P.E. 1	1	P.E. 2	1	Path. 128	2	Path. 129	3
Core A		Chem. 12	4	Dnt. Hy. 105	2	Pcol. 160	3
(Spch. 11 & 12)	3	Dnt. Hy. 2	3	Nutrn. 71	3	Dnt. Hy. 120	1
Biol. 2	4	Dnt. Hy. 85	3	Ed. P. 105	3	Dnt. Hy. 125	4
Chem. 11	4	Dnt. Hy. 90	3	M. Bio. 26	4	Core B	
Dnt. Hy. 1	2					(Soc.&A. 1)	3
Dnt. Hy. 66	1						
	18		18		18		18

Third Year				Fourth Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Dnt. Hy. 168	1	Dnt. Hy. 169	1	Dnt. Hy. 202	2	Dnt. Hy. 206	2-4
Core A (Elective)	3	Dnt. Hy. 174	2	Dnt. Hy. 205	6	Electives	
Core B (Psych. 1)	3	Core B	3	Core B		Maximum	15
Dnt. Hy. 152	1	(Psych. 141 or 164)		(Upper Division		Minimum	12
Anes. 300	2	Core A (Electives)	6	Soc.&A.)	3		
Dnt. Hy. 172	2	Dnt. Hy. 150	2	Electives			
Dnt. Hy. 155*		Dnt. Hy. 155*		Maximum	7		
Dnt. Hy. 154*		Dnt. Hy. 154*		Minimum	4		
					15-18		14-18

\*Year courses—Dnt. Hy. 155 = 6 credit hours; Dnt. Hy. 154 = 4 credit hours.

90. *Oral Histology*. II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention*. I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education*. II. 2 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.
154. *Clinical Dental Hygiene*. I, II. 4 hr. PR: Dnt. Hy. 125. Lectures and clinical application of dental hygiene principles and technics.
155. *Expanded Functions*. I, II. 6 hr. PR: Enrollment in dental hygiene. Lecture, laboratory, and clinical course covering the materials and technics of restorative dentistry and expanded duties for the dental hygienist.
168. *Periodontics*. I. 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics*. II. 1 hr. PR: Dnt. Hy. 168. A sequential course to Dnt. Hy. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.



172. *Public Health*. I. 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
205. *Advanced Clinical Dental Hygiene*. I. 5-6 hr. PR: Senior enrollment in dental hygiene. Role of the dental hygienist in an orthodontic practice, pre- and post-operative care of surgical patients, and introduction to research. Students gain clinical experience in both traditional and expanded duties of the dental hygienist.
206. *Advanced Clinical Dental Hygiene*. II. 2-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.
220. *Special Topics in Dental Hygiene*. I, II. 1-22 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

# School of Medicine

The School of Medicine began as the College of Medicine in 1902. For ten years this program was affiliated with the College of Physicians and Surgeons of Baltimore, Md. In 1912 the School of Medicine had its formal beginning as an independent school offering the first two years of the medical curriculum. The School of Medicine moved from the Downtown Campus to the Medical Center in 1957 and inaugurated a four-year program in 1960. This coincided with the opening of University Hospital. In 1961, the first M.D. degrees were awarded to 15 students.

In 1945 the School of Medicine established a curriculum in Medical Technology leading to a degree of bachelor of science. The first graduates were awarded a combined degree by the College of Arts and Sciences and the School of Medicine in 1947. The Program of Medical Technology was established in the School of Medicine in 1961. The division of Physical Therapy was established and accepted its first class of 16 students in 1970. The division offers the final two years of a baccalaureate program leading to a degree in physical therapy.

West Virginia University Medical Center—Charleston Division was established in October, 1972, with the affiliation of WVU and the Charleston Area Medical Center. The Charleston Division offers programs for third and fourth-year medical students in a variety of required and elective courses.

West Virginia University School of Medicine—Wheeling Division was established in 1974. This program is available for many elective opportunities for students in the fourth year.

## Committees

*Academic Standards:* Charles R. Craig, *Chairperson.*

*Biomedical Research Support:* Thomas J. Tarnay, *Chairperson.*

*Dean's Committee to Clarksburg VA Hospital:* John E. Jones, *Chairperson.*

*Curriculum Committee:* Gale W. Rafter, *Chairperson.*

*Executive Faculty:* John E. Jones, *Chairperson.*

*Educational Advisory:* John E. Jones, *Chairperson.*

*Faculty Promotion:* Robert Burrell, *Chairperson.*

*Medical School-Hospital Liaison to Student Body:* John E. Jones, *Chairperson.*

*Student Admissions:* Morton H. Friedman, *Chairperson.*

*Student Financial Aid:* David Z. Morgan, *Chairperson.*

*Student Research Convocation:* Wilbert E. Gladfelter, *Chairperson.*

*Outstanding Teachers:* Marta J. Henderson, *Chairperson.*

*Planning:* Stephen W. Carmichael, *Chairperson.*

*Continuing Medical Education:* Robert L. Smith, *Chairperson.*

*Intern Advisory:* David Z. Morgan, *Chairperson.*

*Admissions Committee for Medical Technology:* Ann W. Sharpe, *Chairperson.*

*Admissions Committee for Physical Therapy:* Carolyn A. Crutchfield, *Chairperson.*

## Degree

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Combined M.D.-Ph.D. Program

This should be considered only by students who have shown exceptional interest and promise. All of the admission requirements of the School of Medicine and the Graduate School will apply. Specific course requirements and procedures for monitoring progress will be detailed by both schools.

# Admissions

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants who have ties to the state of West Virginia will also be considered. Careful consideration is given to those personal qualifications which bear upon fitness of the applicants for the study and practice of the profession. A booklet entitled "Technical Standards," which is published in accordance with the 1973 Vocational Rehabilitation Act, is available upon request.

## When to Apply for Admission

Application for admission in August, 1981, should be made beginning June 1, upon completion of the 1979-80 school year. The latest date for filing an application is November 30, 1980. It is desirable for applicants to file early and to make certain that New Medical College Admission Test scores, current transcripts, and letters of recommendation are available to the Committee on Admissions.

## College Credit Required

The applicant should present a broad general education including a major in some field, not necessarily a natural science. The Admissions Committee needs evidence of excellence of academic performance and steady progress toward a goal.

An excess of credit hours or higher degrees does little to offset the disadvantages of low grades in securing admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from the West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Committee on Admissions.

English.....	1 year
Biological Sciences (with laboratory) .....	1 year
Inorganic Chemistry (with laboratory).....	1 year
Organic Chemistry (with laboratory) .....	1 year
Physics (with laboratory) .....	1 year
Social or Behavioral Sciences .....	1 year

A total of 90 semester hours of work, exclusive of Military Science (ROTC) and Physical Education, is required.

It is recognized that applicants for medical school may have very diverse undergraduate backgrounds with a variety of majors. While many undergraduate courses, aside from the required prerequisites, might be beneficial in providing additional background for medical school, the choice of such courses should be determined by the academic strengths and weaknesses of the particular applicant.

## New Medical College Admission Test

The scores of the New Medical College Admission Test (New MCAT) are used by the Admissions Committee in considering an applicant for admission. For this reason, it is strongly recommended that students take the test in the Spring before making application for admission. Delaying the test until Fall, even though all science courses may not have been completed, jeopardizes an applicant's opportunity since no final consideration is given until New MCAT scores are obtained by the Admissions Committee. No applicant can be considered who delays taking the New MCAT until Spring of the year of expected entry. Information concerning the time and place of the test can be obtained from your premedical adviser or committee. The New Medical College Admission Test is required of all applicants.



## Personal Interview

No applicant is admitted without an interview by the Committee on Admissions. Currently, all residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Committee on Admissions. The applicant is notified of the time and place of the interview. Interviews and consideration of applicants begin in September.

## Conditions Following Acceptance

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Committee on Admissions.

It should also be apparent that furnishing or causing to be furnished false information for the purpose of the School of Medicine application constitutes grounds for disciplinary action, including but not limited to expulsion or revocation of the acceptance.

## Admission to Advanced Standing

Increasing numbers of inquiries are being received seeking consideration of enrollment in the WVU School of Medicine with advanced standing. Only a limited number of such requests can be processed. Transfer ordinarily will be considered only at the end of the second year. The applicant must have passed Part I of the National Board of Medical Examiners examination and must present certification of good standing in the school from which the student is transferring.

## Examinations and Evaluation of Student Progress

It is the policy of the School of Medicine that the several departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. A Satisfactory (S) or Unsatisfactory (U) designation is formally recorded for each course. In addition, each department files in the Office of the Dean a narrative evaluation of the work of each student identifying strengths and weaknesses and suggesting remedial or corrective measures, if appropriate.

In addition to departmental examinations, which help serve as a basis for recording grades in individual courses, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion. National Board of Medical Examiners, Part I, examinations are given as part of the testing of achievement in individual disciplines and are incorporated in the final grade for that course. The student is encouraged to take the complete Part I examination as a candidate for National Board certification near the end of the second year. The Part II examination is required as a comprehensive test in clinical science at the end of the third year and results are incorporated in the final grades for clinical clerkships.

The overall performance of the student on the National Boards will be taken into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners examination is one mechanism by which a license may be obtained.

## Promotions

The Committee on Academic Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

1. The Committee on Academic Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the committee, the student's overall performance does not meet the academic standards of the School of Medicine. Every effort is made to avoid invoking harsh academic measures unless justified by a substandard academic performance by the student.

2. No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

3. All courses and all classes at the School of Medicine are graded as Satisfactory (S) or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The S and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

4. Readmission of a dismissed student is the prerogative of the Committee on Admissions after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic Standards.

5. Upon concurrent recommendation of the Committee on Admissions, the Committee on Academic Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

*In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.*

## Incomplete Courses

The grade of Incomplete (I) is given when the instructor believes the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure unless special permission to postpone the work is obtained from the Committee on Academic Standards (University rule.) It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses.

## Departure From Scheduled Work

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of

Medicine. This permission is not valid until it has been reported to the Assistant to the Dean of Admissions and Records, Medical Center, for record.

## Honor Code

Students in the School of Medicine agree to abide by the provision of an honor code which requires ethical and moral standards of conduct in all situations.

## Immunizations

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

## University Hospital and Outpatient Clinics

University Hospital and its outpatient clinics opened in the summer of 1960. It is dedicated to the education of students in the multiple disciplines of the health fields and to the advancement of knowledge in the sciences and arts concerned with health and illness.

Specialist services at University Hospital are provided through the staff of the clinical departments of the School of Medicine.

There are also facilities and staff for clinical laboratory service, diagnostic and therapeutic X-ray services, and such special examinations as electrocardiography, cardiac catheterization, and electroencephalography. Emergency facilities are available at all times.

## Organizations

Graduates of the School of Medicine have a *School of Medicine Alumni Association* devoted to the interests of students and graduates and to the encouragement of scientific and professional progress among its members and the medical profession generally.

*Student American Medical Association.* This organization has a chapter among the students of this school. An Auxiliary provides opportunities for student wives to meet and work together.

*Student National Medical Association.* This organization has among its objectives assistance in the recruitment and retention of minority students.

## Lectureships

*Alumni Lectureship.* Annually some outstanding physician is brought to the WVU Medical Center under School of Medicine Alumni Association sponsorship to address the student body.

*Gideon Stanhope Dodds Lectureship.* A periodic lectureship, founded by a group of alumni and friends, honors Dr. Dodds, late professor emeritus of histology and embryology.



# Curriculum Plan

## First and Second Years

The plan of study is directed toward the principles and methodology of the medical basic sciences. However, the basic courses are designed so that the student begins to integrate concepts of patient care.

The student has the opportunity of an additional early exposure to patient-oriented instruction through the introduction to physical diagnosis and community medicine in the first term of the freshman year.

With the recognition that entering medical students have a wide variety of interests and backgrounds, elective opportunities are offered in the basic science years, beginning with the second term of the freshman year. The permissible elective courses or plans of study have broad limits and need not be confined to the Medical Center. The intention is to encourage responsible student initiative.

See Medicine I and Medicine II charts for representative schedules.

## Third Year

A tightly-structured traditional third year gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students will spend part or all of the year in specified clerkships at the Charleston Division of the WVU Medical Center or other affiliated programs as designated by the faculty of the School of Medicine.

## Fourth Year

The fourth year is selective. The student chooses one of three "tracks" and works with advisers at each tract to select the individual program. The general track is appropriate for: (1) the student pointing toward family practice, and (2) the student who has not selected a particular speciality interest.

The student chooses a specialty track by department, and may already recognize an attraction to a sub-specialty within that department. The research track offers opportunity to spend much of the fourth year in medical or biological research.

Sixteen of the 44 weeks must be spent in intramural programs. In addition to programs on the Morgantown campus, the programs at the Charleston Division—WVU Medical Center, qualify as intramural. A similar designation for specific programs is in development at the Wheeling Division—WVU School of Medicine and the Veterans Administration Hospital in Clarksburg. A folder is available that lists the approved intramural selective options.

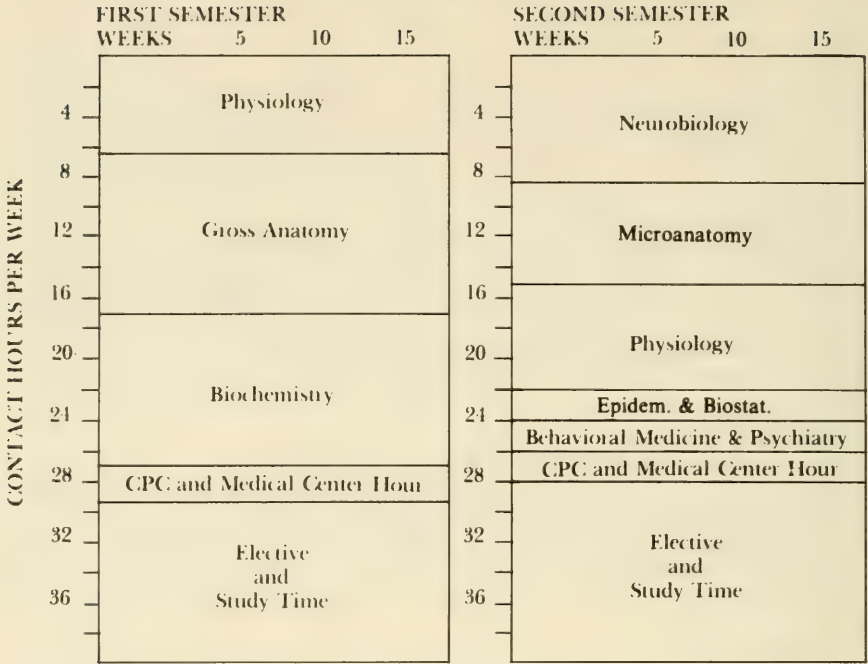
A number of assigned fourth-year students will take all of their clerkships at the Charleston Division of the WVU Medical Center.

The Joint Council of Teaching Hospitals, working with physicians in various communities and the School of Medicine, has developed extramural selective opportunities at a number of hospitals in West Virginia. Alternatively, the selectives may be spent at a university or university-affiliated hospital.

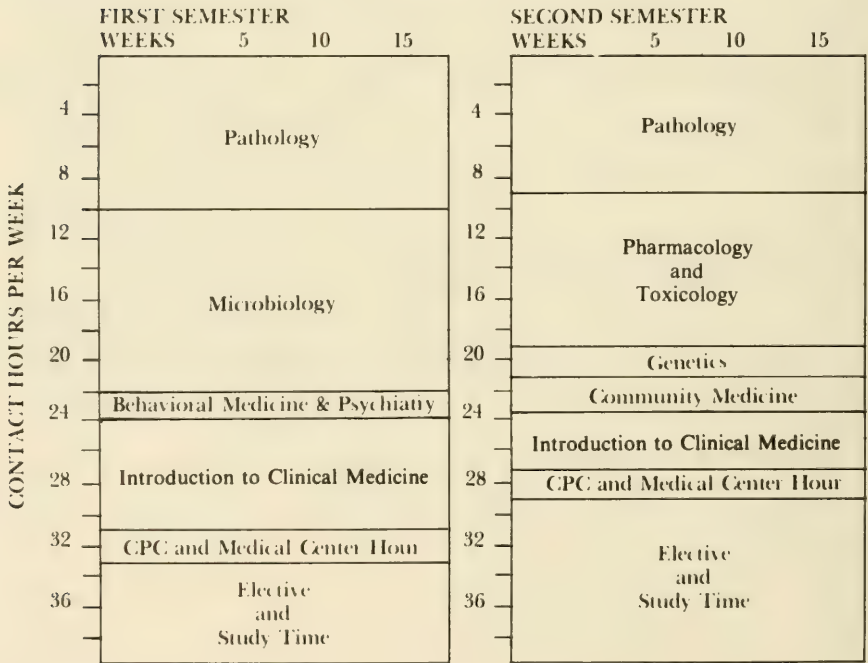
Every student has the opportunity for 4 weeks of vacation. The student may choose valuable medical experience for vacation time.

A separate booklet lists the extramural in-State electives and provides specific guidelines for the fourth-year curriculum.

# MEDICINE I



# MEDICINE II



# MEDICINE III

## Clerkships

WEEKS

12	Medicine
12	Surgery
12	Behavioral Medicine and Psychiatry
	Obstetrics and Gynecology
12	Pediatrics
	Neurology, Pediatrics OPD, Acute Medicine
48	TOTAL



**MEDICINE IV**  
Three Alternative Tracks

WEEKS	GENERAL	SPECIALTY	RESEARCH
4	Vacation	Vacation	Vacation
12	Special Selective Advisory Group Concurrence	Special Selective Department Chairperson Concurrence	Special Selective Advisory Group Concurrence
8	Clinical Neuro Sciences, Behavioral Medicine and Psychiatry, Radiology Ob Gyn or Pathology Including Clinical Pathology	Department Chairperson Approval	Advisory Group Approval
8	Medicine and or Pediatrics, Including Sub Specialty Units		
8	Surgery, Including Sub Specialty Units		
4	Acute and Ambulatory Care		
44	TOTAL		

## Courses of Instruction

### Anesthesiology (Anes.)

Professors Knapp (*Chairperson*), Burke, Eller, Heironimus, and Kennedy; Associate Professors Koliner, Martinez, Rodman, and Smith; Assistant Professors Bettinger, David, Dedhia, Doshi, Graf, Rajaratnam, and Zavisca; Research Instructors Lavine and Poland; Clinical Professors Cwik, Reier, and Weeks; Clinical Associate Professors Tercan and Zeedick; Clinical Assistant Professors Bergman, Hall, Kessel, and Lilly.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)
331. *Clinical Clerkship in Anesthesiology/Acute Medicine. (Third Year.)* CR.  
*A. Lectures to Third-Year Students on Topics Related to Anesthesiology.*  
*B. Clinical Clerkship in Acute Medicine.* Clinical clerks will receive instruction in preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology and toxicology, fluid and blood therapy, and pain management. Methods of instruction include seminars and practical exercises in emergency cardiac life support and clinical experience in the intensive care unit and the operating theatre. (Duration: 2 weeks.)
399. *Selective Experiences in Anesthesiology. (Fourth Year.)* CR. (See Conjoined Courses.)  
*A. Clinical Anesthesiology.* Participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)  
*B. Intensive and Respiratory Care.* Direct participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)
497. *Anesthesiology Research.* 1-15 hr. Participation in ongoing clinical laboratory projects including: The effects of benzodiazepine derivatives as premedicant, induction and amnesic agents for anesthesia; monitoring techniques in the critically ill; pathophysiology of the airway and lung; biochemical and ultra-structural studies of the metabolism of neurotransmitters from central and peripheral nerves; to learn research techniques; newer methods of physiological measurements in critically ill patients. Computer monitoring in intensive care. Duration: 4-24 weeks. Offered: By arrangement. Max. enrollment: 2.

### Behavioral Medicine and Psychiatry (B.M.)

Professors Carter, Flink, Hein, Kelley, Morgan, Quarrick, Waldman, and Watne; Associate Professors Stevenson (*Acting Chairperson*), Clayman, Cone, Hlusko, Ingersoll, Linton, Morgan, Nelson, and Seime; Assistant Professors Baranowski, Brallier, Claude, Clausell, Colvin, Dreyer Ellis, Fonte, Kelley, Kommor, Lerfald, Miller, Morgan, Orr, Puzzuoli, Robison, Settle, Tellers, Walker, and Williams; Instructors Curry, Nash, and Wheeler; Research Associate Professor Pawlicki; Clinical Professors Ayd, Bateman, Carruth, Crawford, Rossman, Schein, and Staples; Clinical Associate Professors Baker, Comer, Edwards, Fink, Goodman, Hibbard, Kerns, Knapp, McCauley, Moriarty, Panepinto, Srebalus, Wanner, Ward, Weiss, and Wilburn; Clinical Assistant Professors Allen, Callahan, Capage, Dorsey, Dunning, Edelstein, Fawley, Hill, Hoback, Hutton, Inger, Kovacevich, Ledwell, McNeer, Naviaux, Panepinto, Pittman, Portz, Puzzoli, Robison, Settle, Sine, D. Smith, L. Smith, R. Smith, Stein, Webb, and Zarski; Clinical Instructors Case, Goldberg, Hunter, Starkey, and Wockenfuss.

311. *Introductory Psychiatry. (First Year.)* 1 hr. Clinical syndromes with discussion of various patterns and defense mechanisms.
321. *Introductory Psychiatry. (Second Year.)* 2 hr. Developmental, interpersonal, and intrapsychic aspects of distorted behavior patterns.

341. *Clinical Clerkship in Psychiatry. (Third Year.)* CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry and participation in diagnosis and treatment of psychiatric disorders.
355. *Behavioral Science and Health Care.* Behavioral science applied to issues related to physical and mental health care. Variety of topics will be considered, such as study of interpersonal roles and games, various cultural "healing" practices, personal and social aspects of illness, family disorganization, and hospitals and related institutions.
399. *Selected Experiences in Behavioral Medicine and Psychiatry. (Fourth Year.)* (See Conjoined Courses.)

## Community Medicine (C. Med.)

Professors Pearson (*Chairperson*) and Mou; Clinical Professors Pickett and Staples; Associate Professors Hall and Smith; Adjunct Associate Professor Carlton; Clinical Associate Professors Arnwine, McCoy, Merchant, and Wiles; Assistant Professors Bosanac, Murray, and Wyant; Clinical Assistant Professors Hinton and Ortmeier; Adjunct Assistant Professor Harper; Clinical Instructors Attfield, Castellan, Reger, Wagner, and Young.

171. *Biostatistics for Health Sciences.* (For physical therapy, medical technology, nursing, or dental hygiene majors only.) I, S. 1 hr. PR: Stat. 101 or equiv. Application of basic concepts of probability and statistics to the health sciences.
311. *Methods of Biostatistics.* I. 3 hr. PR: Math. 3. Basic concepts of statistical models, distributions, probability, random variables, test of hypotheses, confidence intervals, regression, correlation, F and  $X^2$  distributions, analysis of variance with emphasis on methods of biostatistics. (*Equiv. to Stat. 311.*)
312. *Community Medicine. (Second Year.)* II. 2 hr. Open to limited number of graduate students. PR: Consent. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental and occupational factors. The organization of public health and medical care.
322. *Epidemiology and Biostatistics. (First Year.)* II. 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.

## Conjoined Courses (CC MD)

399. *Selective Experiences in Medicine. (Fourth Year.)* I, II, S. CR. PR: Satisfactory completion of first three years of the medical curriculum. (Graded as S or U.) The selective program offers a wide range of opportunities in the basic sciences, medical specialties, and subspecialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the WVU Medical Center—Charleston Division, WVU School of Medicine—Wheeling Division, and the Veteran's Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans an individual program, with faculty advice. Flexibility is permitted. With consent of instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See the intramural and extramural brochure, published annually, describing the selective opportunities.)

## Family Practice

Professors Traubert (*Chairperson*), Carper, Pearson, and Vazquez; Professor Emeritus Sleeth; Associate Professor Weisser; Assistant Professor Nesselroade; Instructor Arbogast; Clinical Professors Davis, Flood, Jarrett, and Simmons; Clinical Associate Professors Brooks, Fullmer, Hess, Kellas, Newman, Rashid, and Sinclair; Clinical Assistant Professors Burke, Crigger, Dickey, Eckmann, Hinton, Hofreuter, Lewis, Patton, Reed, Ritz, Sine, Stemple,



Svoboda, and Swan; Clinical Instructors Clark, Harris, Hayes, McNeill, Roberts, and Wack; Nurse Clinician Nath; Patient Educator Murray.

399. *Selected Experiences in Family Practice. (Fourth Year.)* (See Conjoined Courses.)

## Medicine (Med.)

Professor Emeritus Sleeth; Professors Waldman (*Chairperson*), M. Albrink, W. Anderson, Andrews (*Vice-President*), Flink, Harris, Jain (*Chief, Cardiology Section*), J. Jones (*Dean*), Lapp (*Chief, Division of Pulmonary Section*), McIntosh, D. Z. Morgan (*Associate Dean*), Mou (*Dean, Charleston Division*), Ortel, W. Point (*Assistant Chairperson*), Raich (*Chief, Hematology/Oncology Section*), Shane (*Chief, Metabolism/Endocrinology Section, Associate Chairperson*), and Welton (*Chief, Dermatology Section*); Associate Professors Bekheit, DiBartolomeo (*Chief, Rheumatology Section*), Kluge (*Chief, Infectious Diseases Section*), Lynch, Milutinovic (*Chief, Nephrology Section*), E. Morgan, Shultz (*Chief of Medicine, Wheeling Division*), Stevenson (*Chief, Behavioral Medicine Section*), Ullrich, and Withersty; Adjunct Associate Professor Merchant; Assistant Professors Brestel, Colvin, Crouch, D'Alessandri (*Chief, Comprehensive Medicine*), Dedhia, Deglin, Ganguly, Georgiev, Grubb, D. Hendrick, D. Jones, Khakoo, Mateer, Matragrano, Osanloo, R. Martin, Rogers, Subramanian, Thrush (*Chief, Allergy and Clinical Immunology Section*), Walker, and C. Warren; Adjunct Assistant Professors Boehlocke and Hodous; Instructors Blehschmidt, Dorn, Hoover, Powers, and Savory; Adjunct Instructors Banks, Castellan, and McKay; Clinical Professors Emeritus Blatchley and Tuckwiller; Clinical Professors Lewis, McMillan, Marshall, Pfister, Reiter, Saville, and Selinger; Clinical Associate Professors W. T. Anderson, Artz, Avington, Carter, Chvasta, Conley, Davidson, Eskwith, Gaziano, Hartman, Jackson, Koppel, D. Lee, R. Point, Renn, Revercomb, Santer, Scherr, Scobbo, Shafi, and S. Warren; Clinical Assistant Professors Arnett, Avashia, Basu, Berte, Eskwith, Farmer, Gainer, Glick, Gustke, Hall, A. Hendrick, Latos, McConnell, MacCallum, Masilamani, Mazzocco, Noble, Palmer, Parsons, Patel, Rhudy, Skaggs, Subbiah, Tweel, and Zaldivar; Clinical Instructors Albright, Gomez, A. Lee, Lim, McCagh, Spiggle, and Wu.

321. *Physical Diagnosis—An Introduction to Clinical Medicine. (Second Year.)* Yr. 4-hr. PR: Consent. Examination of normal subjects. Practical experience in history-taking and physical examination of patients.

331. *Clinical Clerkship in Medicine. (Third Year.)* CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the several departments. Clerkship in medicine occupies 12 weeks.

399. *Selected Experiences in Medicine. (Fourth Year.)* CR. (See Conjoined Courses.)

## Neurology (Neuro.)

Professors Gutmann (*Chairperson*), Chou, Gutrecht, and Martin; Associate Professors Azzaro, Crosby, Fakadej, and Svoboda; Assistant Professors Farrell, Mateer, and Tellers; Clinical Professor Poffenbarger; Clinical Assistant Professors Kettler, Morgan, and Pratt

341. *Clinical Clerkship in Neurology. (Third Year.)* CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.

399. *Selected Experiences in Neurology. (Fourth Year.)* CR. (See Conjoined Courses.)

## Obstetrics and Gynecology (Obst.)

Professors White (*Chairperson*), Butcher, and McIntosh; Associate Professors Cox, Durkin, and Sehgal; Assistant Professors Foss and Ashraf; Instructor Dix; Clinical Professors Bonney, Chambers, and Patchell; Clinical Associate Professors Behnam, Giustini, Grubb, Mairs, Maxson, Pak, Palladino, Poole, Stone, and Williams; Clinical Assistant Professors Battaglini, Curnutte, D. Georgiev, Keefer, McKinley, Sandhu, Sims, Stevens, Tomhave, and Withersty; Clinical Instructor Berry.

341. *Clinical Clerkship in Obstetrics and Gynecology.* (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students are involved with care of all patients, participating in an essential role in patient care. Experience extends to outpatient clinics in all aspects of obstetrics and gynecology.
399. *Selected Experiences in Obstetrics and Gynecology. (Fourth Year.)* An elective subinternship in obstetrics and gynecology with major responsibility for patient care beyond that provided during the third-year curriculum. Students participate in outpatient and inpatient care with delegation of responsibility commensurate with level of training and ability. Supervision is provided by house officers and faculty. Greater participation in surgical procedures is provided, as well as active participation in complicated obstetrical patients.

## Ophthalmology (Ophthal.)

Professor Trotter (*Chairperson*); Associate Professors Liu and Colasanti; Assistant Professor Raju; Clinical Associate Professors Hamrick, Magee, O'Conner, and Winkler; Clinical Assistant Professors Rashid, Strickland, and Toma.

399. *Selected Experiences in Ophthalmology. (Fourth Year.)* (See Conjoined Courses.)

## Orthopedic Surgery (Orth. Surg.)

Professor Radin (*Chairperson*); Clinical Professor Emeritus Pickett; Clinical Associate Professors Bowers, Davis, Miller, and Wiley; Clinical Assistant Professors Hills and Stemple; Clinical Instructor Stoll.

399. *Selected Experiences in Orthopedic Surgery. (Fourth Year.)* (See Conjoined Courses.)

## Otolaryngology (Otolaryn.)

Professors Sprinkle (*Chairperson*), Quick, and Veltri; Associate Professors Cody and Lass; Clinical Professor Emeritus S. Hall; Clinical Associate Professors Bryant, Cather, T. F. Hall, Jaquiss, Kamerer, Lim, Malone, Mathias, Morgan, Nichols, Oliverio, Paine, and Spencer; Clinical Assistant Professors Abraham, Azar, Bland, Cipic, Dodd, Haislip, Hatfield, Holt, Nichols, Snider, Touma, Wade, Whitaker, and Wilkinson; Assistant Professor Sporck; Clinical Assistant Professors Bodenhemier, Moidel, and Tekieli; Clinical Instructors Arkis, Curiel, Kania, and McCabe; Adjunct Instructor R. Anderson; Research Associate Maxim.

399. *Selected Experiences in Otolaryngology. (Fourth Year.)* (See Conjoined Courses.)

## Pediatrics (Pedia.)

Professors Klingberg (*Chairperson*), B. Jones (*Associate Chairperson*), Kelley, and Pomerance; Associate Professors Amato, S. Edwards, Fakadej, Neal (*Chairperson*, Pediatric Cardiology), Phillips, Ross, Svoboda, Tenney, and Wible; Assistant Professors Anderson, Dworkin, Mullett, and Myerberg; Instructor Sutherland; Clinical Professors Harrison, Potterfield, and Stabins; Clinical Associate Professors Jakubec, Leslie, Lewine, and Morris; Clinical Assistant Professors Ayoubi, Burech, Crittenden, Hoylman-Ayoubi, Israel, Kleiner,

Lambrechts, Morgan, Rhee, Shawkey, and Staab; Clinical Instructors Majumder, Thatcher, Uy, Verma, and Wolf.

331. *Clinical Clerkship in Pediatrics. (Third Year.)* CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.
370. *Genetics. (Second Year.)* Introduction to the understanding of genetics and heritable diseases in man.
399. *Selected Experiences in Pediatrics. (Fourth Year.)* (See Conjoined Courses.)

## Radiology (Radiol.)

Professors Gabriele (*Chairperson*) and Frich; Associate Professors Elyaderani, Hogan, Horton, and Lai; Assistant Professors Cardo, C. Goodwin, Raji, Sinha, and Slack; Clinical Professors Butler, Castro, Ellswood, A. Goodwin, and Kennard; Clinical Associate Professors Antico, Arbitman, Haslem, Hayes, Leef, Sexton, Szalontay, Wilder, Williams, and Yost; Clinical Assistant Professors Ampil, Barger, Cossrow, Gabriel, Hong, Ko, Koh, Nagarajan, Patterson, Smith, Stupar, Tranguilig, and Wymer.

The radiology staff aids in the instruction of students at all levels of the curriculum. They assist in the teaching of topographic anatomy in the first year. The careful interpretation of roentgenograms is an integral part of each clinical service.

101. *Radiology.* Selected experiences in general radiology.
102. *Neuroradiology.* Review of neuroanatomy with respect to application in neuroradiology. Selected experiences in neuroradiology.
103. *Cardiovascular Radiology.* Review of anatomy and embryology. Selected experiences in central and peripheral vascular radiology.
104. *Radiologic Physics.* Application of physics and mathematics to radiology, nuclear medicine, and radiation therapy.
399. *Selected Experiences in Radiology. (Fourth Year.)* CR (See Conjoined Courses.)

## Surgery (Surg.)

Professors Watne (*Chairperson*), Boland, Moran, Tarnay, E. Warden, and Zimmermann; Clinical Professors Bradford (Emeritus), Dagher, Easley (Emeritus), Gilmore, Hershey, McConnell, McDowell, and Trenton; Associate Professors Hrabovsky and Zekan; Clinical Associate Professors Bock, Charbonniez, Chaphery, Glass, Gray, Kappel, J. Khan, M. Khan, King, Leadbetter, Linger, MacDonald, Mendoza, Velasquez, and Voss; Assistant Professors Ashby, Farrell, Harris, Savrin, Villani, and Kusminsky; Clinical Assistant Professors Boustany, Dickie, Dickinson, Fedde, Griswold, Heiskell, Johnson, Khuri, J. Page, Polack, and Reed; Instructors Curtis, Evans, Hutton, Schwartz, and Veach; Clinical Instructors AbuRahma, Dixon, Kim, Mantz, B. Page, Parker, Strauch, Thrush, and Trammell.

301. *Introduction to Laboratory Animal Experimentation.* I. 3 hr. One lab. Lecture and laboratory course in environmental control, biology, and diseases of laboratory animals. Uses as animal models and techniques of handling, specimen collection, anesthesia, and surgery.
341. *Clinical Clerkship in Surgery. (Third Year.)* CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of house staff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.
399. *Selected Experiences in Surgery. (Fourth Year.)* (See Conjoined Courses.)



## Urology (Urol.)

Professors Milam (*Chairperson*) and Kandzari; Assistant Professor Belis; Clinical Associate Professors Lane, McCoy, McCuskey, and Trapp; Clinical Assistant Professors Celis,\* Durig, Franz, Lee, Lindert, Naranjo, Ravitz, Shannon, and Summers; Clinical Instructor Kassis, McClellan, and Serrato.

399. *Selective Experiences in Urology. (Fourth Year.)* (See Conjoined Courses.)

## Medical Technology Undergraduate Program

The undergraduate program in Medical Technology is under the administration of the School of Medicine. Students are admitted into the program leading to a bachelor of science degree after the completion of two years of premedical technology in an accredited college or university. The WVU medical technology program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and by the National Certification Agency for Medical Laboratory Personnel (NCA).

The undergraduate curriculum includes the premedical technology program, which is offered in the WVU College of Arts and Sciences and at Potomac State College in Keyser and the medical technology program which is offered in the School of Medicine.

Courses of the first two years (premedical technology) may be taken in any institution of recognized standing that offers the courses required for admission into the medical technology program.

Since the course of study of the last two years is of a professional nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses which introduce the student to the medical sciences and courses which prepare the student for the work of the senior year. During the senior year (the second year in the medical technology program) the student receives both didactic instruction and practical experience in the University Hospital laboratories.

The program's primary aim is to provide a strong undergraduate program in medical technology which leads to a Bachelor of Science degree and which provides an educational background acceptable for graduate work in the medical sciences. The purposes are: (1) to provide a program in medical technology which meets the academic standards of the University; (2) to provide medical technologists for clinical, public health, and research laboratories; and (3) to provide an educational background which enables students to prepare for teaching and supervisory positions in medical technology; and (4) to provide an educational background acceptable for graduate work in the medical sciences.

A program for certified medical technologists who desire to complete requirements for a Bachelor of Science degree is available. (Further information may be obtained by contacting the Medical Technology Programs Office.)

## Admission

Application for admission into the junior year (first year in the undergraduate medical technology program) should be made before the beginning of the second semester of the sophomore year in college. Students at WVU or Potomac State College are not transferred automatically from the preprofessional course (first two years) to the professional course (third and fourth years.) Students are selectively admitted to the program for their final two years of work.

Application forms for admission to the professional course are obtained from the office of the Assistant to the Dean of Admissions and Records, Medical Center. These forms should be completed and returned to that office no later than February 1, if the student expects to enter the succeeding first semester classes.

Admission to the third year is on the recommendation of the Admissions Committee to the Dean. A personal interview with the Committee is required. A minimum grade-point average (over-all and science) of 2.0 is required for admission.

### Admission Requirements

Complete information concerning WVU admission, fees and costs, registration, regulations, etc., may be found in the *Undergraduate Catalog* for the College of Arts and Sciences.

(a) Admission requirements for the first year (premedical technology) are those for the College of Arts and Sciences.

(b) Admission to the third year (first year of the medical technology program) is based upon two years of college work with a total of 64 hours as follows:

*English.* 6 hours. (Composition and rhetoric.)

*Biological Science.* 8 hours. (General biology or general zoology.)

*Chemistry.* 15-16 hours. (Inorganic chemistry, 8 hours; quantitative analysis, 3-4 hours; organic chemistry, 4 hours.) (Transfer students are required to have a complete course in organic chemistry to include aliphatic and aromatic compounds.)

*Physics.* 8 hours.

*Physical Education.* 2 hours. (University requirements for students taking first two years in residence.)

*Mathematics.* 3 hours. (College algebra is the minimal course requirement.)

Electives to complete the required hours and to meet WVU Core Curriculum requirements.

Courses such as bacteriology, parasitology, and anatomy should not be taken until after the completion of the sophomore year. A foreign language is recommended for students who plan to do graduate work.

## CURRICULUM PLAN

### Premedical Technology

#### First Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Chem. 15—Inorganic .....	4	Chem. 16—Inorganic .....	4
Engl. 1—Comp. & Rhet. ....	3	Engl. 2—Comp. & Rhet. ....	3
Math. 3 .....	3	Elective .....	3
Biol. 1 .....	4	Biol. 2 .....	4
P.E. 1 .....	1	P.E. 2 .....	1
M. Tec. ** .....	1	M. Tec. 2** .....	1
	<u>16</u>		<u>16</u>

#### Second Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Chem. 115—Quantitative .....	4	Chem. 131—Organic .....	4
Electives* .....	6-7	Electives* .....	6-9
Phys. 1 .....	4	Phys. 2 .....	4
M. Tec. 3** .....	3		
	<u>17-20</u>		<u>14-17</u>

\*Electives from Group A and Group B are to be selected to meet University Core Curriculum requirements.

\*\*Medical Technology 1, 2 and 3 are not required subjects. It is highly recommended that all students take these courses.

## Medical Technology

### Third Year (Medical Technology I)

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
M. Tec. 100 .....	4	Parasitol. 224 .....	4
Bioch. 139 .....	5	M. Bio. 223 .....	5
Physi. 241 .....	4	Bioch. 239 .....	4
Elective .....	3	M. Tec. 101 .....	4
	<u>16</u>		<u>17</u>

### Fourth Year (Medical Technology II)

Students receive didactic and clinical instruction in the University Hospital laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. Students may be required to be "on duty" at irregular hours due to the professional nature of the collegiate program. Likewise, if the student has excessive absences during the senior year, the time loss must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	<i>Hr.</i>
M. Tec. 200—Orientation .....	No Credit
M. Tec. 201—Clinical Microbiology .....	7
M. Tec. 202—Immunohematology and Blood Banking .....	7
M. Tec. 203—Instrumentation .....	2
M. Tec. 204—Clinical Chemistry .....	7
M. Tec. 205—Laboratory Management .....	2
M. Tec. 206—Clinical Microscopy .....	2
M. Tec. 207—Clinical Histopathology .....	2
M. Tec. 208—Clinical Hematology .....	7
M. Tec. 209—Clinical Serology .....	2
M. Tec. 210—Seminar I .....	2
M. Tec. 210—Seminar II .....	2

42

## Degree

The degree of Bachelor of Science in Medical Technology is granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Graduate Program

The WVU Medical Technology graduate program prepares graduate medical technologists for positions either as administrators and teachers in medical technology educational programs, or as supervisors in special areas of the clinical laboratory. The primary objective is to assist in development of knowledge in an area in administration, in education, or a special area of interest selected by the student which may be a special medical laboratory science as the specific area applies to laboratory medicine. Specializations include clinical chemistry, clinical microbiology, hematology, and immunohematology. The specific course work requirements for the master of science degree rests with the graduate adviser in the student's specific area of interest.

*Graduate Committee:* Professors J. Krall, B. Love, H. Mengoli, D. Moore, Jr., N. Rodman, and S. Jagannathan.



## Admission

Applicants must have a baccalaureate degree in medical technology from an accredited institution or a baccalaureate degree in an applied field and be a certified medical technologist with an acceptable certifying agency.

The area of concentration in medical technology desired by the student is considered in the evaluation of the undergraduate record as follows:

1. Individuals who desire to do special study in clinical chemistry, hematology, or immunohematology must have completed 8 hours of physics, 3 hours of mathematics, 4 hours of organic chemistry, and 4 hours of quantitative chemistry on the college level.

2. Individuals who desire to do special study in microbiology must have completed 4 hours of organic chemistry and 16 hours of biological sciences.

3. A minimum of one year's experience in a clinical laboratory is required for admission.

Students will be required to make up deficiencies in the above as well as other deficiencies deemed necessary by the adviser.

Applicants must have a minimum undergraduate grade-point average of 2.5 (based on A = 4.0 grade points) for admission.

Two letters of reference must be on file in the Medical Technology office. One letter should be from the major adviser in the undergraduate college and another from the immediate supervisor of the applicant's present position. An interview will be requested for all applicants who meet the requirements for admission.

Applicants are selected for admission on the basis of scholastic standing, recommendations, and interest in the field of medical technology. The number of applicants accepted is necessarily limited by the available facilities; and in general, applicants with the most experience are considered first.

## Application Procedure

A preliminary application must be filed in the Medical Technology Office.

Letters of recommendation are requested by the Medical Technology Office.

After approval of the preliminary application, the admission procedure is the same as for other programs of the WVU Graduate School.

A personal interview may be required before final admission to the program.

## Course of Study

It is expected that the students who enter the graduate program in Medical Technology will have a goal in mind and a special field of interest in medical technology. The program is tailored to the needs of the student as far as possible. A minimum of 36 semester hours of credit including a research problem is required. The student selects a major area of concentration from either education, supervision, or administration, and a minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunohematology.

A minimum of 12 semester hours of course work in education to include the following is required of all students:

(A). The three following courses are required:

Ed. P. 330—Advanced Education Measurements .....	3 hr.
Ed. P. 320—Introduction to Research .....	3 hr.
Ed. F. 320—Philosophic Systems and Education .....	3 hr.

(B). The student selects *one* of the following:

HL. Ed. 305—Philosophy of Health Education .....	3 hr.
Ed. P. 260—Instructional Media and Technology .....	3 hr.
Ed. P. 360 or 361—Instructional Systems .....	3 hr.
Ed. P. 450—Psychological Foundations of Learning .....	3 hr.
Ed. P. 451—Principles of Instruction .....	3 hr.
Ed. A. 331—Principles of Supervision .....	3 hr.
Ed. A. 330—Principles of Education Leadership .....	3 hr.
Ed. F. 300—Sociology of Education .....	3 hr.

(C). Ed. P. 311 (Statistical Methods), Stat. 311 (Statistical Methods), or C. Med. 311 (Biostatistics) is strongly recommended.

Other courses to complete 36 semester hours are selected by the student (with the help of the adviser) in the area of concentration selected by the student. Students may select courses in departments in schools other than the School of Medicine.

All students must complete a minimum of 18 semester hours in a science related to medical technology including Seminar (3 hr.) and Problem Study (6 hr.).

All students must rotate for orientation purposes through all sections of the University Hospital Clinical Laboratories to include microbiology, hematology, chemistry, immunohematology, and histopathology for a minimum of two days in each laboratory or a total of ten days.

In addition, at the discretion of the student's adviser, other requirements in teaching, supervision, and administration may be necessary.

The adviser works out with the student a plan of study for the entire graduate program. This plan is usually made at the end of the first semester of the student's graduate study. A copy of this "plan of study" is signed by the adviser and student and sent to the Medical Technology office to be put in the student's file.

### Examinations

A final written comprehensive examination in the major and minor interest areas is given approximately one month before the date on which the degree is to be awarded.

An oral defense of the problem is given one month after submission of the Problem Study in its final form to the Graduate Committee.

### Requirements for Degree

All requirements for the master of science degree, as outlined in the *WVU Graduate School Catalog*, must be fulfilled. These requirements can be fulfilled in three semesters of full-time work, but ordinarily at least four semesters are required for completion of the degree requirements.

Degree candidates must have a 3.0 grade-point average and must have removed all incomplete grades and deficiencies.

All students must complete a problem study (see M. Tec. 497).

### Medical Technology (M. Tec.)

1. *Orientation to Medical Technology*. I, II. 1 hr. Principles and practices of medical technology and the role of the medical technologist as a member of the health team.
2. *Orientation to Medical Technology*. II. 1 hr. Continuation of work of M. Tec. 1.
3. *Introduction to Clinical Pathology*. I. 3 hr. Introduces medical terms and illustrates the various aspects of patient care including laboratory diagnostic procedures the student will be doing the third and fourth years.

100. *Medical Technology*. I. 4 hr. Gross and microscopic structure of human body.

101. *Clinical Laboratory Diagnostic Methods*. II. 4 hr. Procedures used in the clinical laboratories.
200. *Orientation*. S. No credit (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics.
201. *Clinical Microbiology*. I, II, S. 7 hr. Lectures and laboratory practice in clinical bacteriology, mycology, and parasitology.
202. *Immunohematology and Blood Banking*. I, II, S. 7 hr. Lectures and laboratory practice in blood banking. Emphasis on procedures required for transfusions, preservation of blood, blood derivatives, and antibody studies.
203. *Instrumentation*. I, II, S. 2 hr. Basic physics and electronics as they apply to laboratory instruments.
204. *Clinical Chemistry*. I, II, S. 7 hr. Lectures and laboratory practice on procedures used in clinical chemistry laboratory. Advanced instruction in specialized technics.
205. *Laboratory Management*. I, II. 2 hr. Laboratory organization, economics, ethics, and records.
206. *Clinical Microscopy*. I, II, S. 2 hr. Lectures and laboratory practice in urinalysis, gastric analysis, pregnancy tests, and other procedures.
207. *Clinical Histopathology*. I, II, S. 2 hr. Lectures and laboratory practice in preparation of human tissues and organs for gross and microscopic examination.
208. *Clinical Hematology*. I, II, S. 7 hr. Lectures and laboratory practice in clinical serology.
209. *Clinical Serology*. I, II, S. 2 hr. Lectures and laboratory practice in clinical serology.
210. *Seminar*. I, II. 1-4 hr. Each student is required to present at least one seminar on some phase of medical technology.
300. *Seminar*. I, II, S. 1 hr. Student registers for 1 hr. each semester. Seminars include laboratory management, education in medical technology, and timely topics. Minimum of 3 hours of seminars to include all three topics is required of graduate students.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration. This study is reported in a thesis-style manuscript. For this study and report, the student registers in M. Tec. 497. Total number of hours earned in M. Tec. 497 is determined by the student's adviser. As many as 9 semester hours may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M. Tec. 497 will be counted toward fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.

## Division of Physical Therapy

The Division of Physical Therapy, under the auspices of the School of Medicine, offers the final two years of a baccalaureate program leading to a degree in physical therapy.

The first two years of study may be completed in the College of Arts and Sciences of WVU, or any other accredited institution which offers courses comparable to the admission requirements of the Division of Physical Therapy. To be eligible for a degree a student must complete the final two years of the curriculum at WVU.

Admission to the third year is based upon 62 or more credit hours of study which satisfies the University Core Curriculum requirements and the prerequisites, or their



equivalent, of the Division of Physical Therapy. *Registration in the first two years does not automatically assure the student a place in the junior class.* A student will be accepted on a competitive basis and selection will be based on scholastic standing and on those personal characteristics which are desirable in physical therapists.

The student must satisfactorily complete a three-month period of clinical internship before the awarding of the baccalaureate degree. A Certificate of Proficiency in Physical Therapy then will be awarded which entitles the graduate to seek membership in the American Physical Therapy Association and to become eligible for state licensure for the practice of physical therapy. A physical therapist can practice professionally only after having passed the state board examination in the state where employment is desired.

A personal interview with the Admissions Committee is required. Only those students who have at least a 2.60 grade-point average and a 2.75 science average (on a 4.0 scale) and who will have completed all the prerequisites of the Division of Physical Therapy by the current Spring semester will be interviewed. Individuals who do not meet the above requirements but who believe extenuating circumstances justify admission may petition the Admissions Committee for an interview. Reasons why the application should receive special consideration should be clearly stated in the petition.

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.*

The Admissions Committee will advise the applicant of the time and place of the interview.

## Admission to the Professional Program

Official enrollment forms are available at the office of the Assistant to Dean, Admissions and Records, Medical Center, beginning December 1 of each year. Application forms should be returned no later than March 1 in the year admission is desired.

## Academic Standards

### Clinical Education Program

Students must satisfactorily complete the pre-internship clinical education program. During this time students will be expected to defray any and all costs of the program. The Clinical Internship Program is an 18-week program and is scheduled following the end of the last semester of the senior year. Before the student is allowed to leave for clinical internships the student must: (1) have completed *all* academic requirements of the program satisfactorily; (2) be of good health and have a full health insurance policy which will be in effect the entire 18 weeks of internship; (3) have an active professional liability insurance policy; (4) be prepared to defray the following types of costs: tuition, travel, room and board, and any incidental cost.

### Promotions and Suspensions

Physical therapy students must register for all prescribed courses for each semester, except by special permission from the Academic Standards Committee of the Division. Permission for repetition of work may be granted only by the Academic Standards Committee.

1. No student will be permitted to register for any work of second year until all courses for the preceding year have been completed successfully.

2. If in the opinion of the faculty that work completed in any unit of a course indicates that a student has a serious lack of understanding of that unit a grade of "I" (incomplete) will be submitted for that student. This may occur even though the student has an acceptable average of all units for the course. It is the student's responsibility to consult with the instructor about the means and schedule for removing incomplete grades.
3. A student who does not assume the responsibility for removing incomplete grades, or who fails to do so in a satisfactory manner, will be given an "F" for the course and will not be permitted to register for advanced courses.
4. No student will be permitted to register for clinical internships (Ph.Th. 290) until all other courses have been satisfactorily completed.
5. Notwithstanding the above rules, a student whose performance has been considered unsatisfactory by the Academic Standards Committee may be required, as a condition for advancement or graduation, to complete special requirements and/or an extended period of study. Such a requirement or special opportunity may be made available at the discretion of the Academic Standards Committee. In addition, the Division of Physical Therapy reserves the right to suspend any student who does not perform at an overall level considered satisfactory for patient care.
6. A student who has been suspended may apply to the Admissions Committee of the Division for readmission.

## Curriculum Plan

This curriculum is designed to satisfy the course requirements for admission to the professional portion of the curriculum in Physical Therapy offered by the School of Medicine. The Core Curriculum requirements must be satisfied, and a total of 62 hours is required for admission to the first professional year. This suggested curriculum plan allows latitude in career choice and is basically compatible with various curricula in the arts and sciences.

First Year			
<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Engl. 1.....	3	Engl. 2.....	3
Psych. 1** .....	3	Chem. 16** .....	4
Chem. 15** .....	4	P.E. 2 .....	1
P.E. 1 .....	1	Electives* .....	9
Electives* .....	6		
	17		17
Second Year			
<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Phys. 1** .....	4	Phys. 2** .....	4
Biol. 1** .....	4	Biol. 2** .....	4
Psych. 141** .....	3	Psych. elect.** .....	3
Stat. 101** .....	3	Electives* .....	6
Electives* .....	3		
	17		17

\*Suggested electives: Foreign Language (6 hr.); Math. 4; Logic; B. Law 111; Psych. 164, 232, 242, 281, 282; Biol. 266.

\*\*Courses required for admission to Division of Physical Therapy. Chem. 15 and 16 are recommended because they are basically compatible with other curricula.

### Third Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Path. 128 .....	2	Anat. 102 .....	3
Anat. 101 .....	4	Anat. 208 .....	2
Anat. 103 .....	2	Ph. Th. 110 .....	3
Physi. 241 .....	4	Ph. Th. 112 .....	3
Ph. Th. 111 .....	5	Ph. Th. 114 .....	2
Ph. Th. 113 .....	1	Ph. Th. 116 .....	1
		Ph. Th. 118 .....	3
	18		17

### Fourth Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Ph. Th. 271 .....	4	Ph. Th. 270 .....	3
Ph. Th. 273 .....	3	Ph. Th. 272 .....	2
Ph. Th. 275 .....	3	Ph. Th. 274 .....	4
Ph. Th. 277 .....	3	Ph. Th. 276 .....	3
Ph. Th. 279 .....	4	Ph. Th. 278 .....	5
Ph. Th. 281 .....	1	Ph. Th. 282 .....	1
	18		18

### Summer

	<i>Hr.</i>
Ph. Th. 290 .....	1-6

## Courses of Instruction in Physical Therapy (Ph. Th.)

Professor Crutchfield (*Acting Director*); Associate Professors Burkart and Petronis; Assistant Professors Barnes and Meacci.

(Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section.)

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal and neuromuscular systems including biomechanics, principles of movement, and analysis of muscle and joint action. Abnormal function due to physical disabilities and pathological disturbances. Students study normal human development and maturation through laboratory sessions involving evaluation and observation of children ranging in age from newborn to 5 years.
111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. PR: Biol. 1, 2; Chem. 15, 16. Lecture-laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy orientation to theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.
112. *Pulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, pathology, and treatment of pulmonary conditions. Laboratory in pulmonary evaluations and respiratory treatment procedures. Lectures and case presentations in medicine and surgery concerning chest and thoracic conditions.
114. *Medicine and Neurology*. II. 3 hr. PR: Ph. Th. 111. Lectures and case presentations in medicine including GI, hematology, endocrinology, dermatology, physiology of aging, and infectious diseases. Orientation to neurology and neurological disorders.
116. *Clinical Education I*. II. 1 hr. (Graded Pass-Fail only.) The physical therapy department, equipment, and procedures. Students observe patient treatment by experienced therapists and perform basic treatment procedures under direct supervision.
117. *Seminar*. I. 1 hr. PR: Ph. Th. 111. Investigation of selected problems and issues.



118. *Basic Therapeutic Exercise*. II. 3 hr. This course includes the application of principles and techniques of traditional forms of anaerobic and aerobic exercises and goniometry. Isotonic, isometric, and isokinetic exercises are presented with an emphasis on the understanding of human cardiopulmonary functions under the stress of motor activity. Laboratory work in the application of basic exercises and pertinent cardiopulmonary stress tests is included.
270. *Organization and Management*. II. 4 hr. PR. Ph. Th. 275, 281. Basic principles and philosophy of management and the organization with emphasis on styles of leadership, group dynamics, theories of motivation, delegation of responsibility and authority, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.
271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures. Basic principles and actual clinical experience with patients offered in electromyography, including nerve conduction and needle insertion studies.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation*. I. 4 hr. PR: Ph. Th. 110, 118. Principles and techniques of performing evaluation testing procedures within the scope of the physical therapist, including manual muscle testing, neurological, ADL, and basic orthopedic evaluations.
274. *Orthopedic Physical Therapy*. II. 3 hr. PR: Ph. Th. 110, 118, 273. Selected lectures and cases in orthopedics. Emphasis on effects and treatment of disease and injury to musculoskeletal and neuromuscular systems. Laboratory practice in orthopedic assessment and procedures, including mobilization techniques.
275. *Professional Literature and Research*. I. 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in the allotted time.
277. *Clinical Teaching*. I. 2 hr. PR: Ph. Th. 273. Emphasis on the physical therapist as a teacher. Students develop skill and techniques in the facilitation of learning, objective writing, and evaluation in both clinic and didactic settings.
278. *Correlative Rehabilitation*. II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise*. I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and functional anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise and methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.
281. *Clinical Education II*. I. 1 hr. (Graded Pass-Fail only.) Continuation of Ph. Th. 116. The student's participation in treatment programs is increased and enlarged to include rehabilitation techniques and basic testing and evaluation procedures.
282. *Clinical Education III*. II. 1 hr. (Graded Pass-Fail only.) Supervised experience in more specialized procedures and testing techniques and inpatient program design.
290. *Clinical Education IV*. S. 1-12 hr. (Graded Pass-Fail only.) Three summer affiliations of six weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health.

# School of Nursing

The faculty believes that man is a physiological, psychological, and social being capable of rational thought and action. Throughout the life span, man systematically progresses through developmental stages and continually strives to meet basic human needs in a uniquely patterned way. Within the context of the sociocultural background, man perceives and responds to stimuli as an integrated whole. Basic human integrity is maintained throughout the process by dynamic continuous interaction with the environment.

Man is a member of innumerable systems within a total society which is organized to meet needs identified by its people with the family being the primary system for meeting social and health needs. To substitute for or assist the family in meeting the health needs of its members, society organizes health care systems. Each individual has the right of access to those resources which will assist in the attainment and maintenance of optimal states of health.

In man, health is a dynamic state of being which constantly fluctuates between varying degrees of illness and wellness. Since man is an integrated being the individual's state of health embodies physiological, psychological, and social dimensions. The optimal state of health which an individual can attain and maintain is unknown but is influenced by genetic endowment, the environment, and the ability to cope with actual or potential stressors.

Nursing shares with other disciplines the overall purpose of the health care system in assisting the client to attain, regain, and retain optimal health. Specifically, the purpose of nursing is to assist the client in the performance of those activities contributing to optimal health (or a peaceful death) that the individual or family would normally initiate and perform unaided if they had the necessary strength, knowledge, and motivation. The practice of nursing embodies the holistic concept of man which is derived from a synthesis of knowledge of the humanities and biological and behavioral sciences. From this conceptual base, the nurse develops and applies technical, interpersonal and intellectual skills in assisting individuals, families, and community groups meet health needs.

The faculty believes that learning is a life-long active process, one which is favored by a climate of personal acceptance of the learners as integrated beings with their own internal motivation, attributes, dignity, and worth. Learning is also a progressive and cumulative experience resulting in changed behavior which becomes useful in subsequent learning situations.

The teaching-learning process includes opportunities for teacher-student interaction in setting goals, selecting and evaluating learning experiences, and in appraising instructional methods and student progress. The process of education takes place in an atmosphere characterized by a democratic spirit in which students and faculty can share learning experiences. Such climate encourages the development of intellectual curiosity, systematic inquiry, the capacity for self-direction and a sense of commitment to continued learning to the end that the individual may become an informed, participating citizen responsible for contributing to the improvement of the profession and society through creative efforts.

## Admission

To qualify for admission to the School of Nursing basic program a candidate must have completed one year of prescribed courses in an accredited college or university. These prescribed courses would include subjects such as: Chemistry, 8 hours; English Composition, 6 hours; Sociology, 3 hours; Psychology, 3 hours; Nutrition, 3 hours; Life-Span/Growth and Development, 3 hours; Core subjects, Physical Education and/or electives, 12 hours.

A dominant factor in the number of students admitted is the limitation of space. A second factor is the academic record of the applicant. The minimum grade-point average for the West Virginia applicant is 2.5; for out-of-state applicants it is 3.2. West Virginia applicants whose grade-point average falls between 2.3 and 2.5 may petition in writing to the Committee on Admissions for special consideration. Such a petition must clearly state the reason(s) why the applicant should receive special consideration. Petitions should be submitted along with the application to nursing.

Out-of-state residents with a grade-point average between 3.0 and 3.2 may petition in the same manner. *Since West Virginia University is a state university, no more than 10 percent of those admitted may be from out of state.*

The review of applicants takes approximately two to three months. The students are notified by mail after review of all applicants is completed. Two weeks after receipt of the letter of acceptance, the student must send a letter stating acceptance of the position to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance deposit must accompany the letter. This deposit is applied toward the registration fees for the first semester. The deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

The School of Nursing will identify ten in-state alternate candidates and three out-of-state alternate candidates. In the event that a student chooses not to accept a place in the class, an alternate will be chosen by the same review process. Vacancies may occur and will be filled up to the last day to register.

Application for admission to the School of Nursing should be made January 1 of the year the candidate wishes to be admitted. These may be presented in person or mailed directly to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. An application fee of \$10.00, payable to West Virginia University, must accompany the completed application.

## Transfer Students

A student from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum, except for courses in Orientation to Nursing. Application for transfer students should be initiated by January 1 in order to allow time for evaluation and processing of credentials. Deadline for receipt of transcripts is February 15. Apply to: Administrative Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506

## Registered Nurse Students

The School of Nursing offers graduates of diploma and associate degree nursing programs the opportunity to complete requirements for the baccalaureate degree in nursing at the Morgantown campus and at the Charleston Division of the WVU Medical Center. General education credits earned in any accredited college or university may be applied toward the fulfillment of the degree requirements, if the course work is comparable.

Registered Nurse applicants are admitted directly to the School of Nursing. Acceptance and placement in the program is dependent upon the individual's academic record and upon the number of spaces available in the program. The license to practice nursing and a grade-point average of 2.5, or better, are required.

Fifteen to 18 semester hours, or equivalent, of general education (core) courses are prerequisite to Nursing 99 (Basic Concepts of Professional Nursing.) About 30 hours of general education courses that meet the WVU Core Curriculum and School of Nursing requirements are recommended before enrollment in the first nursing course. Courses from the following list are appropriate: English 1 and 2, 6 semester hours;



Chemistry, 6-8 semester hours; Introductory Psychology, 3 semester hours; Introductory Sociology, 3 semester hours; Anatomy, 3-4 semester hours; Physiology, 3-4 semester hours; Microbiology, 3-4 semester hours; Pharmacology and Toxicology, 3-4 semester hours; Nutrition, 3 semester hours. Additional Core A, B, or elective credit, before enrolling in Nursing 99, is advised. Additional courses may be advised on the judgment of the adviser upon review of the student's background.

All registered nurse students are required to enroll in Nursing 99 (Basic Concepts in Professional Nursing.) The purpose of this course is to facilitate transition to the baccalaureate curriculum, to assist students with identified learning needs relevant to the curriculum, and to diagnose the students' readiness for advance placement of junior level courses.

Graduates of associate degree programs establish lower-division nursing credit by the transfer of hours, while graduates of diploma programs establish lower-division credit by comprehensive challenge examination of sophomore nursing courses.

Upon successful completion of Nursing 99, and the establishment of lower-division credit, the registered nurse student is eligible for the advanced placement experience. This experience is a conceptual approach to the challenge of junior courses. During this experience a diagnostic and prescriptive analysis of the learning needs of the individual student is made. This diagnosis forms the basis for progression through the remainder of the nursing curricula. Enrollment in junior or senior courses and/or special prescriptive work may follow the advance placement experience. All prerequisites must be met before advancement into senior nursing courses. The senior courses must be taken by enrollment.

Credit for all required nursing courses must be established by enrollment or by advanced placement.

Upon receipt of a letter of acceptance into the program, applicants must send a letter stating intent to enroll to the Administrative Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance tuition deposit should accompany the letter. This deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

Requests for information and application forms for the Morgantown campus should be addressed to the Administrative Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

Application forms and information about the program at Charleston may be obtained from the Student Affairs Coordinator, Charleston Division, WVU Medical Center, 3110 MacCorkle Avenue, S.E., Charleston, WV 25304.

## Academic Standards and Graduation Requirements

The student must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) pass all graded nursing courses with a grade of C or better; and (3) pass all required courses.

A student who fails to meet the requirements listed above must present to the adviser an acceptable plan for meeting the requirements. This plan must be within the policies and standards set by the Committee on Academic Standards.

All students are required to take the National League for Nursing achievement examinations in the respective areas at the completion of their senior-level experience in Maternity Nursing, Nursing of Children, Medical-Surgical Nursing, Psychiatric Nursing, and Community Health Nursing. The student pays approximately \$12.00 for the entire series.

The degree of Bachelor of Science in Nursing (B.S.N) is conferred upon completion of a minimum of 126 hours.

## Non-Credit Continuing Education Program

The School of Nursing offers a comprehensive state-wide continuing education program for nurses desiring to enhance their contributions to the health care of patients and clients through self development activities. This is made possible through a variety of ongoing workshops, seminars, conferences, training programs, mini-courses, and telelecture courses. The telelecture courses are implemented via a two-way amplified telephone system connecting hospitals throughout the state with the School of Nursing broadcasting station where the courses emanate. All education offerings are approved for Continuing Education Units (CEU) and are a minimum of five contract hours. An individual record of CEUs awarded is maintained by the Division of Off-Campus Credit and Continuing Education and is available to participants upon request. General announcements of educational offerings are published annually with specific program information provided during the interim period. Participant's fees vary according to the educational offering and are assessed at the time of registration.

Announcements of educational offerings may be obtained by contacting the School of Nursing.

## Fees, Expenses, Housing, Transportation

Students registering pay the fees shown in the WVU Medical Center fees charts, plus special fees and deposits as required. Fees are subject to change without notice.

Expenses of students attending WVU vary widely according to course of study and their individual tastes.

Students are expected to provide their own equipment and instruments for the clinical courses.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Telephone 304/293-3706.

For information concerning University and privately owned off-campus housing, write or call the WVU Housing Office, 440 Medical Center Dr., Morgantown, WV 26506. Telephone 304/293-3621.

Some clinical experiences require the student to travel in a multi-county area. Each student is responsible for providing her/his own transportation.

## Curriculum

The conceptual framework of the WVU School of Nursing is based on four concepts. These are man, the nursing process, health, and the environment.

The concept of *man* is basic to nursing. Each man assumes many roles in his life. In nursing these roles are specific. Therefore, the concept *man* refers either to the nurse role and/or the client role. The second and third major concepts are *health* and the nursing process. The achievement of health, or a specific goal of health, is the purpose of the nurse providing assistance to the client. The nursing process is the means for achieving this end. The nursing process between nurse and client takes place in and influences a certain *environment*. On the other hand, the *environment* influences the nursing process in many instances. Therefore, the purpose of nursing is to assist the client in the performance of those activities contributing to his health, or in some instances to a comfortable death. These activities would normally be initiated and performed by the client or his family if they had the necessary strength, knowledge and motivation to do so. The conceptual framework, philosophy and terminal objectives of WVU School of Nursing reflect this purpose.

In addition to the four basic concepts there are many subconcepts which are interwoven into the entire curriculum. The successive use of subconcepts will be with increased depth and breadth of knowledge, attitude, and skill.

#### FIRST YEAR

	<i>Hr.</i>
Core A .....	3
Chem. 11, 12 .....	8
Engl. 1 & 2 .....	6
P.E. General Program .....	2
Nsg. 3 .....	1
Nutrn. 71 .....	3
Psych. 1 .....	3
Psych. 141 .....	3
Soc.&A. 1 .....	3
	<hr/>
	32

Nsg. 99 (R.N. only).....6

#### SUMMER BETWEEN SECOND & THIRD YEAR

	<i>Hr.</i>
Nsg. 180 .....	3
Nsg. 181 .....	3
	<hr/>
	6

#### THIRD YEAR

	<i>Hr.</i>
Nsg. 175 .....	2
Nsg. 182 .....	4
Nsg. 183 .....	4
Nsg. 184 .....	4
Nsg. 185 .....	4
Soc.&A. 211 .....	3
	<hr/>
	21

#### SECOND YEAR

	<i>Hr.</i>
Pcol. 160.....	3
Anat. 101 .....	4
Physi. 141 .....	4
M. Bio. 26 .....	4
Core A .....	3
Nsg. 75 .....	2
Nsg. 80 .....	4
Nsg. 81 .....	2
Nsg. 82 .....	4
Nsg. 83 .....	2
	<hr/>
	32

#### EITHER THIRD OR FOURTH YEAR

	<i>Hr.</i>
Core A .....	6
Electives .....	6
	<hr/>
	12

#### FOURTH YEAR

	<i>Hr.</i>
Nsg. 275 .....	3
Nsg. 280 .....	3
Nsg. 281 .....	1
Nsg. 282 .....	2
Nsg. 283 .....	2
Nsg. 284 .....	3
Nsg. 285 .....	3
Nsg. 286 .....	3
Manag. 216 .....	3
	<hr/>
	23



## Master of Science in Nursing (M.S.N.)

The master's program of study is designed to prepare the professional nurse as a nurse clinician who has the necessary knowledge, attitudes, and competencies for the practice of nursing in primary health care. Through the core nursing and elective courses culminating in a final semester advanced practicum, the student builds the theoretical, scientific, and humanistic base for nursing practice. The emphasis is on the preparation for advanced clinical practice which involves an extensive concentration of research, leadership, and education concepts and experiences. The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, thesis option, and the opportunity to investigate an area of interest in an advanced study course. The pattern and duration for the individual student is determined in consultation with a faculty adviser and is based upon the student's background and goals.

### Admission Requirements

The applicant must meet the admission requirements of the WVU Graduate School.

The applicant must have completed a baccalaureate program in nursing which is accredited by the National League for Nursing. Applicants from unaccredited baccalaureate nursing programs will be considered on an individual basis.

Elementary Statistics is a prerequisite.

The following are required of each applicant:

- Personal interview (for admission evaluation and projected program planning).
- Evidence of a current professional nursing licensure in at least one state.
- A letter of recommendation from each of the following: employer, head of undergraduate nursing school, and a colleague.
- Statement of professional goals.

Preference is given to an applicant with:

- An undergraduate grade-point average of B (3.0) or better (A = 4.0).
- At least one year of professional experience.

### Admission Procedure

Application for admission to the Graduate School must be made on a standard form obtainable from the Office of Admissions and Records, West Virginia University, Morgantown, WV 26506. Application is to be returned to that office. (An applicant must be approved for a graduate program in order to be admitted to the Graduate School.)

A supplementary form will be sent to the applicant to be returned to the Chairperson, Graduate Academic Unit, School of Nursing, West Virginia University, Morgantown, WV 26506.

The Office of Admissions and Records will notify the applicant of the actions taken.

### Degree Requirements

Completion of 40 semester credit hours.

Achievement of an overall academic average of B (3.0) or better (A = 4.0) in all work attempted in graduate school.

A master's paper or a master's thesis is required.

Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

Removal of all conditions, deficiencies, and incomplete grades.

Students are expected to register for courses with letter grades (A, B, C), with the exception of electives, which the student may opt to take with Satisfactory (S) or Unsatisfactory (U) grades—subject to the approval of the adviser.

## Curriculum Plan for a Master of Science in Nursing Degree

<i>Nursing</i> (21 credits)	<i>Hr.</i>
Nursing 300—Nursing in Primary Health Care I .....	3
Nursing 301—Nursing in Primary Health Care II .....	3
Nursing 302—Nursing in Primary Health Care III .....	3
Nursing 310—Advanced Practice I .....	3
Nursing 311—Advanced Practice II .....	3
Nursing 312—Advanced Practice III .....	3
Nursing 400—Advanced Practice IV .....	3
<i>Research</i> (4 credits)	
Nursing 370—Theories in Nursing .....	2
Nursing 373—Research Process and Methods in Nursing .....	2
<i>Electives</i> 15 credits	
Nursing 491—Advanced Study .....	1-6
Nursing 497—Thesis .....	3-6
Other Supporting Courses .....	9-12
Total .....	40

## Courses of Instruction in Nursing (Nsg.)

3. *Orientation to Nursing*. I. 1 hr. Introduction to philosophy and responsibilities of professional nursing and role of the professional nurse.
75. *Issues of Nursing I*. I, II. 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature.
80. *Concepts of Nursing I*. I. 4 hr. PR: Sophomore standing or consent. (Taken concurrently with Nsg. 81.) Introduces concepts, principles, and theories of nursing practice in relation to the health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.
81. *Practicum I*. I. 2 hr. PR: Sophomore standing or consent. (Taken concurrently with Nsg. 80.) (Graded Pass-Fail only.) Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families.
82. *Concepts of Nursing II*. II. 4 hr. PR: Nsg. 80, 81 or consent. (Taken concurrently with Nsg. 83.) Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.
83. *Practicum II*. II. 2 hr. PR: Nsg. 80, 81 or consent. (Taken concurrently with Nsg. 82.) (Graded Pass-Fail only.) Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families.
99. *Basic Concepts of Professional Nursing*. I, II, S. 6 hr. PR: Nursing licensure. Focuses on man (family) related to life cycle, stress adaptation, deviations from wellness. Clinical application of nursing theory stresses interrelatedness of health problems, scientific inquiry, and interpersonal processes. Students are assisted to identify their career goals.
175. *Issues of Nursing II*. I, II. 2 hr. PR: Nsg. 75 or consent. Issues of nursing practice. Emphasizes related theories and research.

180. *Concepts of Nursing III. S. 3 hr.* PR: Junior standing or consent. (Taken concurrently with Nsg. 181.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Builds on past intellectual and interpersonal arts and psychomotor skills.
181. *Practicum III. S. 3 hr.* PR: Junior standing or consent. (Taken concurrently with Nsg. 180.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individual and/or families with acute health problems. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor nursing skills.
182. *Concepts of Nursing IV. I, II. 4 hr.* PR: Nsg. 180, 181 or consent. (Taken concurrently with Nsg. 183.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Emphasizes problems associated with man's adaptation, regulatory function, nutrition, and cellular growth.
183. *Practicum IV. I. 4 hr.* PR: Nsg. 180, 181 or consent. (Taken concurrently with Nsg. 182.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families with acute health problems involving man's adaptation, regulatory function, nutrition, and cellular growth.
184. *Concepts of Nursing V. II. 4 hr.* PR: Nsg. 182, 183 or consent. (Taken concurrently with Nsg. 185.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Emphasizes problems associated with man's fluid and electrolyte balance, respiratory and cardiovascular function.
185. *Practicum V. II. 4 hr.* PR: Nsg. 182, 183 or consent. (Taken concurrently with Nsg. 184.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families with acute health problems. Emphasizes problems associated with man's fluid and electrolyte balance, respiratory and cardiovascular function.
275. *Issues of Nursing III. I. 3 hr.* PR: Nsg. 175 or consent. Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.
280. *Concepts of Nursing VI. I. 3 hr.* PR: Senior standing or consent. (Taken concurrently with Nsg. 281.) Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.
281. *Practicum VI. I. 1 hr.* PR: Senior standing or consent. (Taken concurrently with Nsg. 280.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills.
282. *Concepts of Nursing VII. I. 2 hr.* PR: Senior standing or consent. (Taken concurrently with Nsg. 283.) Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.
283. *Practicum VII. I. 2 hr.* PR: Senior standing or consent. (Taken concurrently with Nsg. 282.) (Graded Pass-Fail only.) Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population.
284. *Concepts of Nursing VIII. II. 3 hr.* PR: Nsg. 282, 283 or consent. (Taken concurrently with Nsg. 285, 286.) The synthesis of a personal and professional philosophy of nursing. Emphasis is on concepts influencing the professional role of the nurse within the health care delivery system.
285. *Practicum VIII. II. 3 hr.* PR: Nsg. 282, 283 or consent. (Taken concurrently with Nsg. 284.) (Graded Pass-Fail only.) Selected experiences of practices of professional nursing within the health care delivery system.
286. *Practicum IX. II. 3 hr.* PR: Nsg. 282, 283 or consent. (Taken concurrently with Nsg. 284.) (Graded Pass-Fail only.) Selected experiences for practice of professional nursing of acute health care problems or critical isolated incidents.



300. *Nursing in Primary Health Care I. I.* 3 hr. (Concurrent enrollment or prerequisite to Nsg. 310.) Analysis and synthesis of concepts in nursing and related sciences for the establishment of the conceptual framework for nursing in primary health care.
301. *Nursing in Primary Health Care II. II.* 3 hr. PR: Nsg. 300, 310. (Concurrent enrollment or prerequisite to Nsg. 311.) Analysis and synthesis of concepts in nursing and related sciences basic to specific strategies for the promotion, maintenance, and restoration of health and prevention of illness with the client's environmental framework.
302. *Nursing in Primary Health Care III. I.* 3 hr. PR: Nsg. 311. (Concurrent enrollment or prerequisite to Nsg. 312.) Analysis and synthesis of concepts in nursing and related sciences basic to the understanding of planned change and the impact in society of nursing practice in primary health care.
310. *Advanced Practice I. I.* 3 hr. PR or Conc.: Nsg. 300. Selected experiences with clients for the continuing development of skills in health assessment and the application of concepts of nursing in primary health care.
311. *Advanced Practice II. II.* 3 hr. PR or Conc.: Nsg. 301. Application of concepts and skills relative to the promotion, maintenance and restoration of health prevention of illness through continuing client relationships in nursing practice in primary health care.
312. *Advanced Practice III. I.* 3 hr. PR or Conc.: Nsg. 302. Application of concepts and skills relative to planned change strategies with clients in nursing practice in primary health care.
370. *Theories in Nursing. I.* 2 hr. Comparative analysis of evolving theories in nursing. Emphasis on the development and testing of nursing theories.
373. *Research Process and Methods in Nursing. II.* 2 hr. PR: Nsg. 370. An examination of the research process and methods for incorporation into nursing practice.
400. *Advanced Practice IV. I, II.* 3 hr. PR: Nsg. 312. Interdependent practice with interdisciplinary seminars for the synthesis of knowledge, attitudes, and competencies in primary health care.
491. *Advanced Study. I, II.* 1-6 hr. PR: Graduate standing; consent. Investigation of topics relative to current issues in primary health care.
497. *Thesis. I, II.* 3-6 hr.

# School of Pharmacy

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program—including two years of pre-pharmacy.

The objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy.

The pharmacy curriculum consists of three years of professional study preceded by a minimum of two years of study in an accredited college of arts and sciences.

The curriculum is designed to provide the student with the scientific and technical knowledge and communication skills required to practice the profession and to inculcate in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions are also available in various government agencies, professional organizations, and industry. Pharmacists are eligible for commissions in the armed forces and the U.S. Public Health Service.

Graduates also may prepare for careers in teaching and research by entering graduate schools for specialization in pharmacy, pharmaceuticals, pharmacognosy, pharmaceutical chemistry, pharmacy administration, and pharmacology and toxicology. The pharmaceutical industry provides opportunities in a variety of capacities in promotion, distribution, production, and research.

## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy whose objective is to promote the interests of pharmaceutical education. All institutional members must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be a citizen, not less than 21 years of age, and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of a recognized school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate, without further examination, with forty-seven other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.

## Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this and the *WVU Undergraduate Catalog*.

Students preparing for the study of pharmacy may satisfy the requirements for entrance into the School of Pharmacy by majoring in any arts and sciences subject and including in their course selections the following, or their equivalents:

English Composition .....	6 hr.	Chemistry, General .....	8 hr.
College Algebra .....	3 hr.	Chemistry, Organic .....	8 hr.
Trigonometry .....	3 hr.	Physics .....	8 hr.
Principles of Economics .....	6 hr.	Electives* .....	18 hr.
Biology, General .....	8 hr.		
		TOTAL .....	68 hr.

\*Electives must be designed to satisfy University Core Curriculum requirements. Electives: Core Group A—12 hr.; Core Group B—6 hr.

*University Core Curriculum Group A* includes: Art, English (exclusive of English I and 2), Humanities, Languages, Music, Philosophy, Religious Studies, Selected Multidisciplinary Studies, Speech Communication, and Theatre.

*University Core Curriculum Group B* includes: Forestry 140, Geography, History, Minerals 97, Political Science, Psychology, Selected Multidisciplinary Studies, Social Science, Sociology and Anthropology, and Economics (for Pharmacy students Group B Economics would include economics electives beyond the 6-hr. required courses).

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

Admissions are competitive and are based on cumulative academic average and science average achieved in all prior college courses, a personal interview, and results of the Pharmacy College Admission Test (PCAT).

For admission to the School of Pharmacy, formal application should be made to the Committee on Admissions of the School of Pharmacy as early as possible after January 1, but before April 1, preceding the Fall term (first semester) in which the student is seeking enrollment.

Applicants should write to Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, which will furnish official blanks on which formal application must be made.

A \$10.00 application fee is required and must accompany the application.

Each applicant is expected to deposit \$50.00 before the applicant's name is entered upon the official list of those accepted to the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit fee is forfeited.

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

Complete information may be obtained from the Dean of the School of Pharmacy, or from the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

## Pharmacy College Admission Test

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from your pre-pharmacy adviser, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 304 East 45th St., New York, NY 10017.



## Personal Interview

A personal interview with the Committee on Admissions will be required. Interviews will be held at the WVU Medical Center and will be arranged as far as possible to suit the convenience of the applicant. Interviews are scheduled during February, March, and April. Only applicants with a cumulative and science average above 2.5 will be called for an interview, unless openings are available.

## Admission to Advanced Standing

If space is available, students from other accredited schools of pharmacy may be admitted provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses will not be transferred.

## Student Status and Advancement

The determination of student status is in the hands of the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of the Dean. In the School of Pharmacy, all grades, except W, WU, P, and X, are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average in professional subjects. An F grade, or failure to attain a 2.0 average in any semester, will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second professional year must petition the Committee on Academic Standards for advancement to the third professional year. Any student on probation at the beginning of the second semester second professional year, or who qualifies for probation at the end of that semester, shall not be eligible for summer clerkships.

Any first-professional-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-professional-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 14 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

## Special Requirements

All students satisfactorily completing the first professional year must obtain professional liability insurance before being allowed to begin the second professional year. Professional liability insurance will be continuously maintained in effect through completion of the third professional year. Failure to have the liability insurance will result in the students not being allowed to enroll in required courses.

Students in the first professional year will be required to obtain an Intern Certificate from the West Virginia Board of Pharmacy, and to maintain it through completion of the third professional year.

During the second professional year, students will be informed of their assigned schedules for the third professional year's required clinical clerkships. Students will also be informed as to the West Virginia community or communities in which they will reside during these clerkships, the names of their preceptors, and the dates of attendance. The school will provide the student opportunity to participate in choice of assignments, but it reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying clerkship requirements. A maximum of 24 students will be assigned to the clerkship session during any term (e.g., summer, fall, or spring). Only 8 students will be assigned to each required clerkship during any given four-week period. In the event of over-subscription to any clerkship period or clerkship rotation, priority will be assigned on the basis of grade-point average attained while a full-time student in the School of Pharmacy.

## Requirements for Degree

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

## Course Changes

A student who desires to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission of such change from the Dean.

# Curriculum

Students who have been enrolled in the School of Pharmacy after August, 1975, must complete the School of Pharmacy Curriculum Plan (or modifications of this plan).

## SCHOOL OF PHARMACY CURRICULUM PLAN

### First Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Bioch. 139—Gen. Biochem .....	4	M. Bio. 220—Microbiology.....	4
Anat. 101—Hum. Anat.....	3	Phar. 203—Concepts. Phar. II .....	4
Physi. 241—Mech. Body Funct.....	4	Phar. 228—Phar. Pract. Leg. Env .....	4
Phar. 200—Prep. Phar. Pract. ....	2	Phar. 240—Phar. & Ther. I.....	4
Phar. 201—Concepts Phar. I .....	4	Phar. 241—Fund. Pathophys.....	4
Phar. 227—Phar. Soc. Env. ....	2		
	<hr/> 19		<hr/> 19

### Second Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Pcol. 242—Phar. & Ther. II .....	6	Phar. 205—Phar. Pract.....	4
Phar. 204—Concepts Phar. III .....	4	Phar. 230—Prof. Asp. Phar. ....	3
Phar. 207—Intro. to Drug Lit. ....	1	Phar. 244—Phar. & Ther. III .....	5
Pcol. 242—Phar. & Ther. II .....	6	Phar. 260—Princ. Med .....	2
Phar. 243—Chem. Immu. Agts. ....	3	Electives .....	2-4
Electives .....	1-3		
	<hr/> 17-20		<hr/> 16-18

### Third Professional Year

<i>First Session (Summer)</i>	<i>Hr.</i>	<i>Second Session (First Sem.)</i>	<i>Hr.</i>
Phar. 250—Amb. Care Clerk .....	4	Phar. 250, 251, 252, and 253	
Phar. 251—Med. Team Clerk .....	4	(See First Session .....	16
Phar. 252—Inst. Care Clerk .....	4	or	
Phar. 253—Elect. Clerk .....	4	Electives .....	16
	<hr/> 16	or	
		Free Session	

or  
Free Session

<i>Third Session (Second Sem.)</i>	<i>Hr.</i>
Phar. 250, 251, 252, and 253 .....	16
or	
Electives .....	16
or	
Free Session	



# Graduate Programs

## Pharmaceutical Sciences

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

### Admission

Applicants for admission must satisfy the general requirements for admission to the WVU Graduate School. The applicant will possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences. In addition, graduate record examination scores in the verbal and quantitative portions of the examinations will be required from all students, and TOEFL, or similar scores, will be required of foreign students.

### Academic Standards

No credits are acceptable toward a graduate degree with a grade lower than a C.

The graduate student must have a cumulative grade-point average of at least 3.0 in all graduate courses to qualify for the degrees.

### Master of Science (M.S.)

The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmacognosy, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceuticals, and pharmacokinetics.

### Requirements for M.S. Degree

To be eligible for the degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis.

Upon completion of the course work and research requirements, and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

### Doctor of Philosophy (Ph.D.)

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry, pharmaceuticals/biopharmaceuticals/pharmacokinetics, and behavioral and administrative pharmacy.

### Requirements for Ph.D. Degree

The student's first semester is usually occupied with course work while he or she is under the guidance of an assigned interim committee. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S. en route to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the

Ph.D. program, although the student with committee advice may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S. except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted to the Graduate School by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted for candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

## Courses of Instruction in Pharmacy

Professors Lim, Luzzi, C. Malanga, O'Connell, and Wojcik; Associate Professors Baldwin, Brister, Covington, Daniels Howard, Jacknowitz, Mauger, O'Donnell, and Stratford; Assistant Professors Bell (part-time), Berger, J. Deglin, Hoy, Ma, Miller, Proveaux, Riley, Steiner, and Tourville; Instructors Anido, Miles, Skarzenski, and Winsley; Lecturers Gill, Lively, and Sensabaugh; Clinical Associate Professor Lowe; Adjunct Assistant Professors Cunningham and Harper; Clinical Assistant Professor S. Deglin; Adjunct Instructor Swisher; Clinical Instructors Anderson, Anile, Bartsch, Bovenizer, Calemene, Caplan, Comm, Corkrean, Crawford, Criss, DeBone, Deem, Doyle, Egan, Flanagan, Fruth, Gastineau, Gianettino, Goodykootz, J. Griffith, W. Griffith, Hickman, Holmes, Jarvis, Johnson, Johnston, D. Jones, R. Jones, F. Judy, S. Judy, Lang, Lindsay, Lusk, M. Malanga, Martin, Matheny, Meredith, Midcap, Miller, Muha, Neuman, Olive, Pierce, Plummer, Plyburn, Prario, Prettyman, Ritchie, Scott, Shaw, Slaven, Smith, Stanley, Stout, Taylor, Tonkovich, Toompas, Turk, VanMeter, Wells, Zicafoose, and Ziolkowski.

## Pharmacy (Phar.)

200. *Preparation for Pharmacy Practice*. I. 2 hr. PR: First-year pharmacy student or consent. A study of pharmaceutical calculations, pharmaceutical literature, and an overview of pharmacy practice.
201. *Concepts in Pharmaceutics I*. I. 4 hr. PR: First-year pharmacy student or consent. A discussion of introductory material in the practice of pharmacy and a discussion of the concepts underlying solution dosage forms.
203. *Concepts in Pharmaceutics II*. II. 4 hr. PR: Phar. 201. Basic principles of formulation, *in vitro* evaluation and bioavailability implications of pharmaceutical dosage forms represented by solids and polyphasic systems. Includes small- and large-scale processing of tablets, capsules, suspensions, emulsions and suppositories.
204. *Concepts in Pharmaceutics III*. I. 4 hr. PR: Second-year standing in pharmacy or consent. Special dosage forms, quality control, and drug dosage regimens of pharmaceutical formulations and their conformity with F.D.A. regulations and good manufacturing practices.
205. *Pharmacy Practice*. II. 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.
207. *Introduction to Drug Literature*. I. 1 hr. PR: Second-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.

211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile dosage forms. 2 hr. lec., 3 hr. lab.
212. *Non-Prescription Drugs*. I. 3 hr. PR: Second-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
- 213/300. *Industrial Pharmacy*. II. 4 hr. PR: Phar. 204 or graduate standing. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
- 214/314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
- 215/315. *Physical Pharmacy*. II. 3 hr. PR: First-year standing in pharmacy or consent. Designed to illustrate the special application of physiochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. I. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.
227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.
229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I, 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
240. *Pharmacodynamics and Therapeutics I*. II. 4 hr. PR: First-year standing in pharmacy or consent. Consolidation of pharmacologic and medicinal chemical principles underlying mechanisms of drug action and the therapeutic applications of these pharmacodynamic principles in the management of disease states.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
242. *Pharmacodynamics and Therapeutics II*. I. 6 hr. PR: Phar. 240 or consent. Continuation of Phar. 240.
243. *Chemotherapeutic and Immunobiologic Agents*. I. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.
244. *Pharmacodynamics and Therapeutics III*. II. 5 hr. PR: Pcol. 242 or consent. Continuation of Pcol. 242.



249. *Drugs and Medicines*. I. 3 hr. (Not intended for pharmacy majors.) PR: General biology or consent. Physiology and organic chemistry suggested. A course intended to introduce the nonhealth professional student to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.
250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will participate on a health care team in an inpatient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Extensive experience will be gained in the practice of pharmacy in institutional centers with emphasis on the pharmacist's relationship with institutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Therapeutics*. I. 3 hr. PR: Phar. 244 or equiv., and consent. A discussion and integration of pharmacological-therapeutic concepts in the study of problems which may be encountered by the pharmacist in drug management of selected disease states.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.
272. *Medicinal Chemistry*. I. 3 hr. PR: Consent.
276. *Pharmaceutical Quality Control*. I. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present. (*Course will not be offered in 1980-81.*)
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies. (*Course will not be offered in 1980-81.*)
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S. 1-3 hr. PR: Consent. Original investigation in pharmaceuticals, medicinal chemistry, pharmacognosy, or pharmacy.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
302. *Advanced Pharmaceutics*. I or II. 3 hr. Physiochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.
320. *Drug Regulation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.
321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.

323. *Economics of the Pharmaceutical Industry*. I or II. 3 hr. History, background, and formation of major drug industries, oligopolistic practices, mergers, combines, costs of research, and production.
340. *Organic Plant Constituents*. I or II. 3 hr. Occurrence, properties, biogenesis, etc. of a number of classes of organic compounds derived from plants. Emphasis on secondary metabolites which contain products of pharmaceutical or medicinal interest.
341. *Isolation of Plant Constituents*. I or II. 3-5 hr. Acquaints the student with techniques used in extraction, separation, and isolation of plant constituents.
370. *The Synthesis of Drugs*. I or II. 4-5 hr. Design of drug molecules on the basis of structure-activity relationships and approaches to synthesis of such compounds. Laboratory to accompany in which representative types of biologically active compounds are prepared.
375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of Phar. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.
377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.
390. *Special Topics*. I, II. 1-4 hr.
391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. Presentation and discussion of special topics and research in the pharmaceutical sciences.
396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
491. *Advanced Study*. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
496. *Graduate Seminar*. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of the student's program.
497. *Research*. 1-15 hr.
498. *Thesis*. 2-4 hr. PR: Consent.

# Faculty and Staff

Gene A. Budig, Ed.D., *President*.  
B. A. Nugent, Ph.D., *Vice-President for Academic Affairs*.  
Charles E. Andrews, M.D., *Vice-President for Health Sciences*.  
Joseph C. Gluck, M.Div., *Vice-President for Student Affairs*.  
Raymond M. Haas, D.B.A., *Vice-President for Administration*.  
Ray Koppelman, Ph.D., *Vice-President for Energy Studies, Graduate Programs, and Research*.  
Harold J. Shamberger, M.P.A., *Executive Officer*.  
Henry D. Collins, J.S.D., *Assistant to the President*.  
Harry W. Ernst, M.S.J., *Assistant to the President for Public Affairs*.  
Marion F. Dearnley, J.D., *Special Assistant to the President and Coordinator of Equal Employment Opportunity and Affirmative Action Affairs*.

## Medical Center

*Charleston Division*, Thomas W. Mou, M.D., *Dean*.  
*Dentistry*, W. Robert Biddington, D.D.S., *Dean*.  
*Medicine*, John E. Jones, M.D., *Dean*.  
*Nursing*, Lorita D. Jenab, Ed.D., *Dean*.  
*Pharmacy*, Louis A. Luzzi, Ph.D., *Dean*.  
*University Hospital*, Eugene L. Staples, M.H.A., *Administrator*.

## School of Dentistry

Joseph Abrams, D.D.S. (U. Louisville), *Clinical Assistant Professor of Community Dentistry*.  
John D. Adams, D.D.S. (U. Pitt), *Professor Emeritus of Fixed Prosthodontics*.  
Camillo A. Alberico, D.D.S. (Marquette U.), *Assistant Dean; Professor of Endodontics*.  
Lester H. Bakos, D.D.S. (WVU), *Assistant Professor of Hospital Dentistry*.  
Jack H. Baur, Jr., D.D.S. (WVU), *Clinical Instructor (part-time) in Endodontics*.  
Henry J. Bianco, Jr., D.D.S. (U. Md.), *Professor and Chairperson of Prosthodontics*.  
W. Robert Biddington, D.D.S. (U. Md.), *Dean; Professor of Endodontics*.  
David E. Boaz, D.D.S. (Northwestern U.), *Assistant Professor of Dental Practice Management*.  
Joseph J. Bonnell, D.D.S. (U. Pitt), *Clinical Associate Professor (part-time) of Orthodontics*.  
Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor and Chairperson of Oral Pathology*.  
Dale C. Bowers, D.D.S. (Ohio St. U.), *Associate Professor of Oral Diagnosis and Radiology*.  
James L. Bramble, D.D.S. (WVU), *Clinical Instructor (part-time) in Prosthodontics*.  
Thomas C. Cady, LL.M. (U. Tex.), *Lecturer (part-time) in Dental Jurisprudence*.  
Anthony L. Camele, D.D.S. (WVU), *Clinical Instructor (part-time) in Prosthodontics*.  
John L. Campbell, D.D.S. (Ind. U.), *Professor Emeritus of Oral Surgery*.  
Minter L. Chapman, D.D.S. (WVU), *Clinical Associate Professor (part-time) of Operative Dentistry*.  
Damon E. Coffman, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry*.  
Myles I. Cogan, D.D.S. (U. Tex.), *Clinical Instructor in Oral Surgery*.  
H. Lee Courtney, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry*.  
Sharon M. Crowder, D.D.S. (WVU), *Instructor in Prosthodontics*.  
Glenn D. Crowe, B.A. (U. N.C.), *Adjunct Assistant Professor of Dental Practice Management*.  
Rose-Marie Crystal, M.S. (Columbia U.), *Assistant Professor of Dental Hygiene*.  
Donald Davidson, D.D.S. (U. Buffalo), *Clinical Associate Professor of Oral Surgery*.  
Christina DeBiase, M.A. (WVU), *Assistant Professor of Dental Hygiene*.  
Leo F. DeCounter, D.D.S. (U. Iowa), *Professor of Removable Prosthodontics*.  
John Dempsey, D.D.S. (U. Md.), *Clinical Assistant Professor (part-time) of Orthodontics*.  
Gerald Dice, D.D.S. (Ohio St. U.), *Clinical Assistant Professor of Community Dentistry*.  
Peter H. Fagan, D.D.S. (Loyola U., Chi.), *Clinical Instructor in Hospital Dentistry*.  
Frederick P. Farris, D.D.S. (U. Md.), *Clinical Instructor in Hospital Dentistry*.  
Sanford J. Fenton, D.D.S. (NYU), *Assistant Professor of Pediatric Dentistry*.  
James R. Foror, D.D.S. (WVU), *Assistant Professor of Operative Dentistry*.  
Cathryn L. Frere, M.S. (U. So. Calif.), *Assistant Professor of Dental Hygiene*.  
John W. Frye, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Operative Dentistry*.  
David G. Funderburk, D.D.S. (WVU), *Clinical Instructor (part-time) in Endodontics*.  
Galvin J. Gaver, D.D.S. (U. Md.), *Professor of Operative Dentistry*.  
Stephen C. Gladwin III, D.D.S. (Ohio St. U.), *Assistant Professor of Operative Dentistry*.



Douglas Gnepp, M.D. (Duke U.), *Instructor (part-time) in Oral Pathology.*  
 William L. Graham, D.D.S. (U Md.), *Assistant Dean; Professor and Chairperson of Oral Diagnosis and Radiology.*  
 Catherine E. Graves, B.S. (U. Buffalo), *Assistant Professor of Dental Hygiene.*  
 Robert W. Graves, D.D.S. (WVU), *Associate Professor and Chairperson of Oral Surgery.*  
 James A. Griffin, D.D.S. (Baylor U.), *Professor of Endodontics.*  
 Geoffrey A. Gwynn, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Pediatric Dentistry.*  
 James D. Haddox, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry.*  
 Patricia P. Hagan, D.D.S. (WVU), *Clinical Instructor (part-time) in Pediatric Dentistry*  
 Joseph D. Hancock, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry.*  
 George W. Harper, D.D.S. (WVU), *Assistant Professor of Removable Prosthodontics.*  
 Richard I. Hart, D.D.S. (U. Mich.), *Assistant Professor of Operative Dentistry.*  
 David M. Hickman, D.D.S. (WVU), *Assistant Professor of Dental Practice Management.*  
 Robert H. Hornbrook, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Periodontics.*  
 Michael K. Hurst, D.D.S. (WVU), *Instructor in Dental Practice Management.*  
 Jack G. Hutton, Jr., Ph.D. (U. Conn.), *Visiting Educational Specialist.*  
 Barbara Ingersoll, Ph.D. (Penn St. U.), *Associate Professor of Community Dentistry.*  
 Charles R. Jackson, D.D.S. (WVU), *Assistant Professor of Operative Dentistry.*  
 S. N. Jagannathan, Ph.D. (U. Bombay), *Associate Professor of Community Dentistry.*  
 David C. Johnsen, D.D.S. (U. Mich.), *Associate Professor of Pediatric Dentistry.*  
 Avia Kaplan, M.S. (Boston U.), *Assistant Professor of Dental Hygiene.*  
 Richard C. Kelly, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Operative Dentistry.*  
 Gordon G. Keyes, D.D.S. (U. Md.), *Assistant Professor of Oral Pathology.*  
 Darryl R. King, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Oral Surgery.*  
 Edward Klein, D.D.S. (U. Pitt), *Clinical Instructor in Hospital Dentistry.*  
 Edwin V. Kluth, D.D.S. (Case West. Res. U.), *Associate Professor of Prosthodontics.*  
 Barbara K. Komives, M.S. (Ohio St. U.), *Associate Professor and Chairperson of Dental Hygiene.*  
 Marcia Krouse, M.S. (U. Ky.), *Assistant Professor of Dental Hygiene.*  
 Lonnie Kuhn, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 Stephen J. Kwiatkowski, D.D.S. (WVU), *Associate Professor of Fixed Prosthodontics.*  
 Gregory A. Lacy, D.D.S. (WVU), *Instructor in Removable Prosthodontics.*  
 Raymond M. Ladwig, D.D.S. (WVU), *Associate Professor of Fixed Prosthodontics.*  
 Claude R. Lee, D.M.D. (U. Ky.), *Clinical Instructor in Hospital Dentistry.*  
 Young Jai Lee, D.D.S. (U. Korea), *Assistant Professor of Removable Prosthodontics.*  
 William R. McCutcheon, D.D.S. (WVU), *Professor and Chairperson of Community Dentistry.*  
 Hubert E. Martin, D.D.S. (U. Pitt), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Michael D. Mason, D.D.S. (WVU), *Clinical Instructor (part-time) in Operative Dentistry.*  
 Richard L. Meckstroth, D.D.S. (Loma Linda U., Cal.), *Assistant Professor of Community Dentistry.*  
 William W. Merow, D.D.S. (U. Md.), *Professor and Chairperson of Orthodontics.*  
 Paul F. Mitchell, D.M.D. (N.J. C.), *Assistant Professor of Hospital Dentistry and Dental Practice Management, Charleston Division.*  
 Robert N. Moore, D.D.S. (Northwestern U.), *Associate Professor of Orthodontics.*  
 Wilbur C. Moorman, D.D.S. (Va. Cwealth U.), *Clinical Professor (part-time) of Hospital Dentistry.*  
 Donald J. Morrison, D.D.S. (U. Iowa), *Professor and Chairperson of Periodontics.*  
 Robert L. Murphy, M.S. (Cath. U. Am.), *Adjunct Associate Professor of Community Dentistry.*  
 David A. Nash, D.M.D. (U. Ky.), *Professor and Chairperson of Pediatric Dentistry.*  
 Gary G. Naylor, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Operative Dentistry.*  
 Leslie E. Nicholson, D.D.S. (WVU), *Clinical Instructor (part-time) in Pediatric Dentistry*  
 Linda S. Oliver, D.D.S. (U. Md.), *Instructor in Periodontics.*  
 Franklin Oliverio, D.D.S. (U. Md.), *Clinical Assistant Professor (part-time) of Oral Surgery.*  
 James E. Overberger, D.D.S. (U. Pitt), *Associate Dean; Professor of Dental Materials.*  
 Donald E. Patthoff, D.D.S. (U. Detroit), *Clinical Instructor in Hospital Dentistry.*  
 Robert Pawlicki, Ph.D. (York U.) *Adjunct Associate Professor of Community Dentistry.*  
 James L. Payne, D.D.S. (U. Mo.), *Clinical Instructor in Hospital Dentistry.*  
 Robert G. Pifer, D.D.S. (WVU), *Associate Professor of Oral Diagnosis and Radiology.*  
 David T. Puderbaugh, D.D.S. (WVU), *Professor and Chairperson of Dental Practice Management.*  
 Vernon Rodeffer, D.D.S. (U. Md.), *Assistant Professor of Operative Dentistry.*  
 Jack A. Roth, D.D.S. (U. Md.), *Assistant Professor of Removable Prosthodontics.*  
 Richard A. Salzer, D.M.D. (U. Penn), *Clinical Assistant Professor of Hospital Dentistry.*  
 Robert E. Sausen, D.D.S. (U. Minn.), *Professor and Chairperson of Operative Dentistry.*

Donald T. Sauter, D.D.S. (Ohio St. U.), *Clinical Instructor (part-time) in Prosthodontics.*  
 Richard J. Seime, Ph.D. (U. Minn.), *Associate Professor of Community Dentistry.*  
 Kim M. Simon, D.D.S. (Va. Commonwealth U.), *Clinical Instructor (part-time) in Hospital Dentistry.*  
 A. Eddy Skidmore, D.D.S. (WVU), *Associate Professor and Chairperson of Endodontics.*  
 Homer W. Smith, D.D.S. (WVU), *Associate Professor of Oral Diagnosis.*  
 Norton P. Smith II, D.D.S. (WVU), *Clinical Instructor (part-time) in Fixed Prosthodontics.*  
 James M. Snyder, D.D.S. (WVU), *Instructor in Community Dentistry.*  
 Charles Somers, D.D.S. (Loyola U.), *Professor of Removable Prosthodontics.*  
 Charles J. Stewart, D.D.S. (WVU), *Instructor in Endodontics.*  
 David B. Swartz, D.D.S. (WVU), *Clinical Instructor (part-time) in Endodontics.*  
 Lawrence E. Syner, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Hospital Dentistry.*  
 Andrew J. Tatich, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Daniel R. Taylor, D.D.S. (WVU), *Instructor in Periodontics.*  
 Elizabeth A. Taylor, B.S. (WVU), *Instructor in Dental Hygiene.*  
 Nancy E. Taylor, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 James G. Thomas, D.D.S. (Temple U.), *Professor of Oral Diagnosis and Radiology.*  
 Harold E. Tucker, D.D.S. (Va. Cwealth U.), *Professor of Fixed Prosthodontics.*  
 LeRoy J. Utt, D.D.S. (WVU), *Clinical Assistant Professor of Operative Dentistry.*  
 James E. Valentine, D.D.S. (WVU), *Clinical Assistant Professor of Orthodontics.*  
 Edmond G. VandenBosche, D.D.S. (U. Md.), *Associate Professor of Operative Dentistry.*  
 Alfred VanRiper, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Removable Prosthodontics.*  
 Joseph E. Van Sickels, D.D.S. (Med. C. Va.), *Assistant Professor of Oral Surgery.*  
 David H. Walker, D.D.S. (WVU), *Assistant Professor of Dental Practice Management, Charleston Division*  
 Robert L. Wanker, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Periodontics.*  
 William A. Weaver, D.D.S. (Ohio St. U.), *Associate Professor of Operative Dentistry.*  
 John T. Welch, D.D.S. (U. Md.), *Professor and Chairperson of Hospital Dentistry.*  
 Stephen G. Wilbourn, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 Marc Wild, D.D.S. (WVU), *Instructor in Prosthodontics.*  
 John B. Wilfong, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 John A. Wilson, D.D.S. (Ohio St. U.), *Clinical Associate Professor of Community Dentistry.*  
 Michael A. Wilson, D.D.S. (WVU), *Clinical Assistant Professor of Oral Surgery.*  
 William M. Wine, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Hospital Dentistry.*  
 John T. Wright, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*

## School of Medicine

Ernest L. Abernathy, M.D. (Emory U.), *Clinical Professor of Pathology.*  
 Charles Abraham, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Henry L. Abrons, M.D. (Case West. Res. U.), *Adjunct Instructor in Medicine (Pulmonary).*  
 Ali F. Abuhahma, M.B.Ch. (Alexandria U. Sch. Med.), *Clinical Instructor in Surgery.*  
 Francis Adams, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy.*  
 George B. Albright, M.D. (Bowman Gray), *Clinical Instructor in Medicine (General Internal).*  
 Margaret J. Albrink, M.D. (Yale U.), *Professor of Medicine (Metabolism-Endocrinology).*  
 Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), *Professor of Pathology.*  
 Martin D. Allan, M.S. (WVU), *Adjunct Instructor in Radiology (Radiation Safety).*  
 Joel Allen, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Ralph S. Amato, M.D. (U. Neb.), *Associate Professor of Pediatrics.*  
 Federico L. Ampil, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Edwin L. Anderson, M.D. (U. S.C.), *Assistant Professor of Pediatrics, Charleston Division.*  
 Roger W. Anderson, M.D. (WVU), *Adjunct Instructor in Otolaryngology.*  
 Warren T. Anderson, M.D. (Temple U.), *Clinical Associate Professor of Medicine (Cardiology).*  
 William E. Anderson, M.D. (U. Minn.), *Professor of Medicine; Section Chief of Gastroenterology.*  
 Charles E. Andrews, M.D. (Boston U.), *Professor of Medicine (Pulmonary); Vice-President for Health Sciences.*  
 Holly P. Andrea, B.S. (U. Pitt), *Clinical Instructor in Physical Therapy.*  
 Vicente Anido, M.D. (Havana U.), *Professor Emeritus of Pathology (Clinical).*  
 Dominic A. Antico, M.D. (U. Chi.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Michael Arbitman, M.D. (U. Louisville), *Clinical Associate Professor of Radiology (Diagnostic).*

James G. Arbogast, M.D. (WVU), *Instructor in Family Practice.*  
 Peter N. Arkis, M.A. (Kent State U.), *Instructor in Otolaryngology.*  
 Jerome Arnett, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary)*  
 Don L. Arnwine, M.S. (Northwestern U.), *Clinical Associate Professor of Community Medicine.*  
 Steven A. Artz, M.D. (Syracuse U.), *Clinical Associate Professor of Medicine (General Internal).*  
 Marshall W. Ashby, M.D. (Howard Med. C.), *Assistant Professor of Surgery.*  
 Muhammad Ashraf, M.B.B.S. (King Edward Med. C.), *Assistant Professor of Obstetrics and Gynecology.*  
 Michael D. Attfield, (Edinburgh U.), *Adjunct Instructor in Community Medicine.*  
 Bipinchandra M. Avashia, M.B.B.S. (Med. C., Baroda), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
 Michael D. Avington, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology).*  
 Frank J. Ayd, M.D. (U. Md.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
 Moustassem Ayoubi, M.D. (Damascus U.), *Clinical Assistant Professor of Pediatrics.*  
 Vera L. Holyman-Ayoubi, M.D. (WVU), *Clinical Assistant Professor of Pediatrics.*  
 Robert W. Azar, M.D. (WVU), *Clinical Assistant Professor of Surgery (Otolaryngology).*  
 Albert J. Azzaro, Ph.D. (WVU), *Associate Professor of Neurology and Pharmacology and Toxicology.*  
 Ronald C. Backer, Ph.D. (U. Ariz.), *Adjunct Assistant Professor of Pharmacology and Toxicology.*  
 Sheldon R. Baker, Ed.D. (Case West. Res. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Prakash C. Bangani, M.B.B.S. (Med. C., Indore), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Daniel E. Banks, M.D. (Wayne St. U.), *Adjunct Instructor in Medicine (Pulmonary Medicine).*  
 Thomas A. J. Baranowski, Ph.D. (U. Kans.), *Assistant Professor of Community Medicine; Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Carl Barger, M.D. (Med. C. Va.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Carolyn E. Barnes, Ph.D. (U. Pitt), *Assistant Professor of Physical Therapy.*  
 Dilip K. Basu, M.B.B.S. (U. Calcutta), *Clinical Associate Professor of Medicine (General Internal).*  
 Mildred Mitchell-Bateman, M.D. (Wom. Med. C. Pa.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
 John J. Battaglini, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Kamal M. Behnam, M.D. (U. Cairo), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Soad Bekheit-Saad, M.D. (U. Cairo), Ph.D. (Queen's U., Belfast), *Associate Professor of Medicine (Cardiology).*  
 John A. Belis, M.D. (Jeff. Med. C.), *Assistant Professor of Urology.*  
 John U. Bell, Ph.D. (Dalhousie U., Can.), *Assistant Professor of Pharmacology and Toxicology.*  
 Ross O. Bell, M.D. (U. Penn), *Clinical Associate Professor of Pathology.*  
 William A. Beresford, Ph.D. (Oxford U.), *Professor of Anatomy*  
 Stuart K. Bergman, M.D. (Geo. Wash. U.), *Clinical Assistant Professor of Anesthesiology.*  
 Bruce L. Berry, M.D. (WVU), *Clinical Instructor in Obstetrics and Gynecology.*  
 John B. Berte, M.D. (Georgetown U.), *Clinical Assistant Professor of Medicine (Pulmonary).*  
 Robert Bettinger, M.D. (Med. C. Va.), *Assistant Professor of Anesthesiology.*  
 James B. Blair, Ph.D. (U. Va.), *Associate Professor of Biochemistry.*  
 James E. Bland, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Donald M. Blatchley, M.D. (Jeff. Med. C.), *Clinical Professor Emeritus of Medicine.*  
 Nancie A. Blehschmidt, B.S. (WVU), *Instructor in Medicine (Metabolism-Endocrinology) and Medical Technology.*  
 Robert C. Bock, M.D. (U. Louisville), *Clinical Associate Professor of Surgery.*  
 Wayne G. Bodenheimer, Ph.D. (U. Pitt), *Clinical Assistant Professor of Otolaryngology.*  
 Brian Boehlecke, M.D. (SUNY—Buffalo), *Adjunct Assistant Professor of Medicine (Pulmonary Medicine).*  
 James P. Boland, M.D. (Jeff. Med. C.), *Professor of Surgery; Chief of Surgery, Charleston Division.*  
 Walter A. Bonney, Jr., M.D. (Columbia U.), *Clinical Professor of Obstetrics and Gynecology.*  
 Beverly R. Born, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Susan P. Borsuk, B.S. (U. Md.), *Clinical Instructor in Physical Therapy.*  
 Edward M. Bosanac, M.S. (U. Pitt), *Assistant Professor of Community Medicine.*



Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor of Pathology*.  
 Mohammed M. Boustany, M.D. (Damascus U.), *Clinical Assistant Professor of Surgery*.  
 K. Douglas Bowers, Jr., M.D. (Jeff. Med. C.), *Clinical Associate Professor of Orthopedic Surgery*.  
 Carole Brooks Boyd, M.D. (Wayne St. U.), *Associate Professor of Pathology*.  
 Bert E. Bradford, Jr., M.D. (Wash. U.), *Clinical Professor Emeritus of Surgery*.  
 Joseph E. Bradley, B.S. (WVU), *Clinical Instructor in Physical Therapy*.  
 Nancy K. Brallier, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
 Eric P. Brestel, M.D. (U. Fla.), *Assistant Professor of Medicine (Allergy and Clinical Immunology); Physician, University Health Service*.  
 Arlo P. Brooks, Jr., M.D. (WVU), *Clinical Associate Professor of Family Practice*.  
 Paul B. Brown, Ph.D. (U. Chi.), *Associate Professor of Physiology*.  
 James Bryant, M.D. (WVU), *Clinical Associate Professor of Otolaryngology*.  
 Dennis L. Burech, M.D. (Ohio St. U.), *Clinical Associate Professor of Pediatrics*.  
 Sandy L. Burkart, Cert.PT (U. Penn), *Assistant Professor of Physical Therapy*.  
 Arnold C. Burke, M.D. (U. Ala.), *Clinical Assistant Professor of Family Practice*.  
 Simpson S. Burke, M.D. (Harvard U.), *Professor of Anesthesiology*.  
 Robert G. Burrell, Ph.D. (Ohio St. U.), *Professor of Microbiology*.  
 Fred R. Butcher, Ph.D. (Ohio St. U.), *Professor of Biochemistry*.  
 Roy L. Butcher, Ph.D. (Iowa St. U.), *Professor of Obstetrics and Gynecology*.  
 Andrew K. Butler, M.D. (Rush Med. C.), *Clinical Professor of Radiology*.  
 Bobby L. Caldwell, M.D. (Bowman Gray Sch. Med.), *Clinical Associate Professor of Pathology*.  
 Edward J. Callahan, Ph.D. (U. Vt.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 George R. Callender, M.D. (U. Md.), *Clinical Assistant Professor of Orthopedic Surgery*.  
 Margaret Calvert, B.S., Cert.PT (U. Del.), *Clinical Instructor in Physical Therapy*.  
 William J. Canady, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry*.  
 James Capage, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Amelia Jean Cardo, M.D. (N.J. Sch. Med.), *Clinical Assistant Professor of Radiology (Diagnostic)*.  
 Billy Ray Carlton, Ed.D. (U. Tenn.), *Adjunct Associate Professor of Community Medicine*.  
 Stephen W. Carmichael, Ph.D. (Tulane U.), *Associate Professor of Anatomy*.  
 Marshall J. Carper, M.D. (Med. C. Va.), *Professor of Family Practice, Charleston Division*.  
 James F. Carruth, Ph.D. (U. Ill.), *Clinical Professor of Behavioral Medicine and Psychiatry*.  
 Donald C. Carter, M.D. (U. Nebr.), *Professor of Behavioral Medicine and Psychiatry*.  
 William H. Carter, M.D. (U. Va.), *Clinical Associate Professor of Medicine (General Internal)*.  
 Walter A. Case, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry*.  
 Robert M. Castellan, M.D. (Brown U.), *Adjunct Instructor in Community Medicine and Pulmonary Medicine*.  
 Vincent Castranova, Ph.D. (WVU), *Adjunct Assistant Professor of Physiology*.  
 Carl H. Cather, Jr., M.D. (Harvard U.), *Clinical Associate Professor of Otolaryngology*.  
 Carrel M. Caudill, M.D. (Duke U.), *Clinical Professor of Neurological Surgery*.  
 Jose A. Celis, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Urology*.  
 Graciano E. Cendana, M.D. (U. St. Thomas), *Clinical Associate Professor of Pathology*.  
 John T. Chambers, M.D. (Case West. Res. U.), *Clinical Professor of Obstetrics and Gynecology*.  
 William W. L. Chang, M.D. (Nat'l. Taiwan U.), *Associate Professor of Pathology*.  
 Jacques Charbonnier, M.D. (French U.), *Clinical Associate Professor of Surgery*.  
 Nyles Charon, Ph.D. (U. Minn.), *Assistant Professor of Microbiology*.  
 Shi-Ming (Samuel) Chou, M.D. (Nat'l. Taiwan U.), Ph.D. (U. Wisc.), *Professor of Pathology, Neurology, and Neurological Surgery*.  
 Louise Christensen, B.S. (WVU), *Clinical Instructor in Physical Therapy*.  
 Thomas E. Chvasta, M.D. (U. Pitt), *Clinical Associate Professor of Medicine (Gastroenterology)*.  
 Joseph A. Cipic, M.D. (U. Pitt), *Clinical Assistant Professor of Otolaryngology*.  
 Thomas S. Clark, M.D. (WVU), *Clinical Instructor in Family Practice*.  
 John P. Claude, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
 Paul L. Clausell, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry*.  
 David A. Clayman, Ph.D. (U. Vt.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
 Robert C. Cody, M.A. (U. Iowa), *Associate Professor of Otolaryngology*.  
 Brenda K. Colasanti, Ph.D. (WVU), *Associate Professor of Ophthalmology and Pharmacology and Toxicology*.

Howard D. Colby, Ph.D. (SUNY), *Professor of Physiology.*  
 David F. Colvin, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine).*  
 Philip E. Comer, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Janice W. Cone, M.S. (U. Denver), *Associate Professor of Behavioral Medicine and Psychiatry.*  
 Francis W. Conley, M.D. (U. Iowa), *Clinical Associate Professor of Medicine (General Internal).*  
 Joel I. Cossrow, M.D. (T. Jeff. Med. U.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Donald W. Cox, M.D. (Geo. Wash. U.), *Associate Professor of Obstetrics and Gynecology.*  
 Charles R. Craig, Ph.D. (U. Wisc.), *Professor of Pharmacology and Toxicology.*  
 Paul L. Crawford, Ph.D. (Ohio U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
 William D. Crigger, M.D. (Temple U.), *Clinical Assistant Professor of Family Practice.*  
 William C. Crittenden, M.D. (Vanderbilt U.), *Clinical Assistant Professor of Pediatrics.*  
 Thomas W. Crosby, M.D. (WVU), *Associate Professor of Neurology and Pathology.*  
 Michael E. Crouch, M.D. (U. Ark.), *Assistant Professor of Medicine (Rheumatology).*  
 Carolyn A. Crutchfield, Ed.D. (WVU), *Professor and Acting Director of Physical Therapy.*  
 Michael R. Cuadra, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Pathology.*  
 James L. Culbertson, Ph.D. (Tulane U.), *Associate Professor of Anatomy.*  
 Roberta Curiel, M.S. (WVU), *Instructor in Otolaryngology.*  
 L. Douglas Curnutte, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Amos Curry, M.S.W. (WVU), *Instructor in Behavioral Medicine and Psychiatry, Charleston Division.*  
 Robert Curtis, M.D. (Dartmouth C.), *Instructor in Surgery (Emergency Room).*  
 John C. Cwik, M.D. (Jeff. Med. C.), *Clinical Professor of Anesthesiology.*  
 Ibrahim K. Dagher, M.D. (Am. U. Beirut), *Clinical Professor of Surgery.*  
 Robert D'Alessandri, M.D. (N.Y. Med. C.), *Assistant Professor of Medicine; Section Chief of General Internal Medicine.*  
 Jean Danner, Ph.D. (Brandeis U.), *Adjunct Assistant Professor of Biochemistry.*  
 Paul Davidson, M.D. (U. Minn.), *Clinical Associate Professor of Medicine (Metabolism-Endocrinology).*  
 Charles M. Davis, Jr., M.D. (U. Penn), *Associate Professor of Surgery.*  
 DelRoy R. Davis, M.D. (U. Wash.), *Clinical Professor of Family Practice.*  
 Wirt L. Davis, M.D. (Med. C. Va.), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Samuel J. Deal, Ph.D. (U. Minn.), *Professor of Microbiology.*  
 Harakh V. Dedhia, M.B.B.S. (Grant Med. C.), *Assistant Professor of Anesthesiology and Medicine (General Internal).*  
 Stuart M. Deglin, M.D. (Jeff. Med. C.), *Assistant Professor of Medicine (Cardiology).*  
 Anthony DiBartolomeo, M.D. (WVU), *Associate Professor of Medicine; Section Chief of Rheumatology; Assistant Dean for Graduate Medical Education; Medical Director, Ambulatory Care.*  
 Thomas O. Dickey, M.D. (Ohio St. U.), *Clinical Assistant Professor of Family Practice.*  
 Herbert G. Dickie, Jr., M.D. (U. Va.), *Clinical Assistant Professor of Surgery.*  
 Daniel Dickinson, M.D. (U. Pitt), *Clinical Assistant Professor of Surgery.*  
 Beverly Diurba, B.S. (U. Pitt), *Clinical Instructor in Physical Therapy.*  
 Patricia Mary Dix, M.D. (U. Ill.), *Instructor in Obstetrics and Gynecology.*  
 Donald L. Dixon, M.D. (Ohio St. U.), *Clinical Instructor in Surgery.*  
 Larry A. Dodd, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Amy K. Dorn, M.D. (U. Miami), *Instructor in Medicine (General Internal); Physician, University Health Service.*  
 E. Richard Dorsey, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Dinesh M. Doshi, M.B.B.S. (U. Bombay), *Assistant Professor of Anesthesiology.*  
 Steven Dreyer, Ph.D. (U. N.D.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 John J. Duda, Ph.D. (WVU), *Adjunct Assistant Professor of Microbiology.*  
 Ralph O. Dunker, Jr., M.D. (Ohio St. U.), *Assistant Professor of Neurological Surgery.*  
 Edward T. Dunn, M.D. (U. Va.), *Clinical Associate Professor of Family Practice.*  
 Dorothy C. Dunning, Ph.D. (Tufts U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 James Durig, M.D. (WVU), *Clinical Assistant Professor of Urology.*  
 John W. Durkin, Jr., M.D. (U. Vt.), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics and Gynecology, Wheeling Division.*  
 Paul H. Dworkin, M.D. (J. Hopkins U.), *Assistant Professor of Pediatrics.*  
 George W. Easley, M.D. (Med. C. Va.), *Clinical Associate Professor Emeritus of Surgery.*  
 Leonard M. Eckmann, M.D. (NYU), *Clinical Assistant Professor of Family Practice.*

Barry A. Edelstein, Ph.D. (Memphis St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Roy A. Edwards, Jr., M.D. (Med. C. Va.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Sam B. Edwards, Jr., M.D. (Duke U.), *Associate Professor of Pediatrics (Pediatric Cardiology).*

Richard W. Eller, M.D. (Temple U.), *Professor of Anesthesiology.*

John S. Ellingson, Ph.D. (U. Mich.), *Associate Professor of Biochemistry.*

Thomas E. Ellis, Ph.D. (Baylor U.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

William H. Ellswood, M.D. (Tufts U.), *Clinical Professor of Radiology (Diagnostic).*

M. K. Elvaderani, M.D. (Tehran U.), *Associate Professor of Radiology (Diagnostic).*

Allan L. Engleberg, M.D. (Mt. Sinai Sch. Med.), *Adjunct Instructor in Community Medicine.*

Irwin S. Eskwith, M.D. (Syracuse U.), *Clinical Associate Professor of Medicine (Cardiology).*

Patricia R. Evans, M.D. (WVU), *Instructor in Surgery (Emergency Room).*

Alexander V. Fakadej, M.D. (U. Va.), *Associate Professor of Neurology and Pediatrics.*

Donald E. Farmer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*

Kevin J. Farrell, M.D. (Med. C. Wisc.), *Assistant Professor of Surgery and Anesthesiology.*

Okey B. Fawley, M.S.W. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Jeffrey Fedan, Ph.D. (U. Ala.), *Adjunct Assistant Professor of Pharmacology and Toxicology.*

Charles W. Fedde, M.D. (U. Colo.), *Clinical Assistant Professor of Surgery.*

Kenneth M. Fink, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

William W. Fleming, Ph.D. (Princeton U.), *Professor and Chairperson of Pharmacology and Toxicology.*

Edmund B. Flink, M.D., Ph.D. (U. Minn.), *Claude Worthington Benedum Professor of Medicine (Metabolism-Endocrinology) and Behavioral Medicine and Psychiatry.*

Richard E. Flood, M.D. (Jeff. Med. C.), *Clinical Professor of Family Practice.*

Richard J. Fonte, M.D. (N.J. Med. Sch.), *Assistant Professor of Behavioral Medicine and Psychiatry).*

John F. Foss, M.D. (U. Iowa), *Assistant Professor of Obstetrics and Gynecology; Physician, University Health Service.*

John L. Fox, M.D. (Geo. Wash. U.), *Professor of Neurological Surgery.*

Gunter N. Franz, Ph.D. (U. Wash.), *Associate Professor of Physiology.*

John P. Franz, M.D. (Georgetown U.), *Clinical Assistant Professor of Urology.*

David G. Frazer, Ph.D. (WVU), *Adjunct Associate Professor of Physiology.*

Richard G. Frederickson, Ph.D. (U. N.D.), *Associate Professor of Anatomy.*

John C. Frich, Jr., M.D. (Geo. Wash. U.), *Professor of Radiology; Section Chief of Radiation Therapy.*

Morton H. Friedman, Ph.D. (U. Tenn.), *Associate Professor of Anatomy.*

James L. Frost, M.D. (J. Hopkins U.), *Professor of Pathology.*

Nicholas W. Fugo, M.D. (U. Chi.), Ph.D. (St. U. Iowa), *Professor of Obstetrics and Gynecology.*

John L. Fullmer, M.D. (WVU), *Clinical Associate Professor of Family Practice.*

Peter Gabriel, M.D. (Creighton U.), *Clinical Assistant Professor of Radiology (Diagnostic).*

Orlando F. Gabriele, M.D. (Yale U.), *Professor and Chairperson of Radiology.*

R. Brooks Gainer, M.D. (WVU), *Clinical Assistant Professor of Medicine (General Internal).*

Hugh Galford, B.S. (D&E C.), *Clinical Assistant Professor of Physical Therapy.*

Rama Ganguly, Ph.D. (U. Calcutta), *Assistant Professor of Medicine (Infectious Diseases) and Microbiology.*

Dominic J. Gaziano, M.D. (Med. C. Va.), *Clinical Associate Professor of Medicine (General Internal).*

James A. Genin, M.D. (WVU), *Clinical Instructor in Ophthalmology.*

Demitar Georgiev, M.D. (U. St. Klement), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Maria Georgiev, M.D. (Med. Sch. Charles U.), *Assistant Professor of Medicine, Charleston Division.*

Vincent F. Gerencser, Ph.D. (U. Ky.), *Associate Professor of Microbiology.*

Alfred D. Gaphery, M.D. (U. Pitt), *Clinical Associate Professor of Surgery.*

Robert L. Ghiz, M.D. (Northwestern U.), *Clinical Assistant Professor of Orthopedic Surgery.*

Nicholas Giarritta, M.D. (U. Zurich), *Clinical Assistant Professor of Pathology.*

William E. Gilmore, M.D. (U. Wisc.), *Clinical Professor of Surgery.*

Fernando G. Giustini, M.D. (U. Rome), *Clinical Associate Professor of Obstetrics and Gynecology.*

Wilbert E. Gladfelter, Ph.D. (U. Penn), *Associate Professor of Physiology.*

Henry R. Glass, Jr., M.D. (U. Louisville), *Clinical Associate Professor of Surgery.*

Louis M. Glick, M.D. (U. Md.), *Clinical Assistant Professor of Medicine (Gastroenterology).*



Douglas R. Gnepp, M.D. (Duke U.), *Assistant Professor of Pathology.*

Lewis S. Goldberg, Ph.D. (Am. U.), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

Rafael A. Gomez, M.D. (Bowman Gray Sch. Med.), *Clinical Instructor in Medicine (General Internal).*

Irving J. Goodman, Ph.D. (U. Rochester), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Andrew Goodwin, M.D. (U. Mich.), *Clinical Professor of Radiology (Diagnostic).*

Claudia (Morgan) Goodwin, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*

David F. Graf, M.D. (Albany Med. C.), *Assistant Professor of Anesthesiology.*

Robert W. Graves, D.D.S. (WVU), *Associate Professor of Pharmacology and Toxicology.*

David B. Gray, M.D. (U. Md.), *Clinical Associate Professor of Surgery.*

Francis H. Green, M.D. (Manchester U.), *Adjunct Assistant Professor of Pathology.*

Frank C. Griswold, M.D. (WVU), *Clinical Assistant Professor of Surgery.*

George L. Grubb, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*

Stephen R. Grubb, M.D. (Med. C. Va.), *Assistant Professor of Medicine, Charleston Division.*

Beverly Ann Gryth, B.A. (Augsburg C.), *Clinical Assistant Professor of Physical Therapy.*

Robert F. Gustke, M.D. (WVU), *Clinical Assistant Professor of Medicine (Gastroenterology).*

Barbara J. Gutman, M.Ed. (U. Pitt), *Assistant Professor of Medical Technology.*

Ludwig Gutmann, M.D. (Columbia U.), *Professor and Chairperson of Neurology; Professor of Physiology.*

Jose A. Gutrecht, M.D. (U. B. Aires), *Professor of Neurology.*

Nicholas Hahon, B.S. (D&E C.), *Adjunct Assistant Professor of Pediatrics.*

Duane E. Haines, Ph.D. (Mich. St. U.), *Professor of Anatomy.*

Charles E. Haislip, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*

Milton R. Hales, M.D. (U. S.C.), *Professor of Pathology.*

David S. Hall, Ph.D. (U. Ky.), *Associate Professor of Community Medicine.*

John E. Hall, Ph.D. (Purdue U.), *Professor of Microbiology.*

Rodney L. Hall, M.D. (WVU), *Clinical Associate Professor of Anesthesiology.*

Sobisca S. Hall, M.D. (U. Chi.), *Clinical Professor Emeritus of Otolaryngology.*

Trevelyn F. Hall, II, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*

William L. Hall, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*

George V. Hamrick, M.D. (U. Md.), *Clinical Associate Professor of Ophthalmology.*

John L. Hankinson, M.S. (Ga. Tech.), *Adjunct Assistant Professor of Physiology.*

Kerry Harbet, B.S. (WVU), *Instructor in Medical Technology.*

Harold H. Harper, M.S. Pharm. (WVU), *Adjunct Assistant Professor of Community Medicine.*

Charles L. Harris, Ph.D. (U. Ill.), *Associate Professor of Biochemistry.*

Howard H. Harris, M.D. (U. Mo.), *Assistant Professor of Surgery.*

Willard S. Harris, M.D. (NYU), *Professor of Medicine (Cardiology).*

William L. Harris, M.D. (WVU), *Clinical Instructor in Family Practice.*

Hollister S. Harrison, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics.*

John M. Hartman, M.D. (U. Md.), *Clinical Associate Professor of Medicine (General Internal).*

J. Battle Haslem, M.D. (Duke U.), *Clinical Assistant Professor of Radiology (Radiation Therapy).*

Sherman E. Hatfield, M.D. (Med. C. Va.), *Clinical Assistant Professor of Otolaryngology.*

Richard D. Hayes, M.D. (WVU), *Clinical Instructor in Family Practice.*

William G. Hayes, M.D. (Tulane U.), *Clinical Associate Professor of Radiology (Diagnostic).*

George A. Hedge, Ph.D. (Stanford U.), *Professor and Chairperson of Physiology.*

Elwood H. Heilman, M.D. (U. Okla.), *Clinical Assistant Professor of Orthopedic Surgery.*

Peter L. Hein, M.D. (Georgetown U.), *Professor of Behavioral Medicine and Psychiatry.*

Terring W. Heironimus, III, M.D. (U. Va.), *Professor of Anesthesiology.*

Charles A. Heiskell, M.D. (Northwestern U.), *Clinical Assistant Professor of Surgery.*

Marta J. Henderson, M.S. (WVU), *Associate Professor of Medical Technology.*

Alex M. Hendrick, M.D. (U. London), *Clinical Assistant Professor of Medicine (Hematology/Oncology).*

David J. Hendrick, M.D. (U. London), *Assistant Professor of Medicine (Pulmonary Medicine).*

Charles D. Hershey, M.D. (U. Mich.), *Clinical Professor Emeritus of Surgery.*

Robert D. Hess, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice.*

Robert W. Hibbard, M.D. (U. Tenn.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

David P. Hill, M.D. (Duke U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Rusi A. Hilloowala, Ph.D. (U. Ala.), *Associate Professor of Anatomy.*

Bette G. Hinton, M.D. (U. Louisville), *Clinical Assistant Professor of Community Medicine and Family Practice.*

David E. Hinton, Ph.D. (U. Miss.), *Associate Professor of Anatomy.*

George P. Hlusko, M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry and Pediatrics, Charleston Division.*

Florence K. Hoback, M.D. (U. Md.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Thomas K. Hodous, M.D. (J. Hopkins U.), *Adjunct Assistant Professor (part-time) of Medicine (Pulmonary Medicine).*

Donald H. Hofreuter, M.D. (Columbia U.), *Clinical Assistant Professor of Family Practice.*

Michael T. Hogan, M.D. (Albany Med. C.), *Associate Professor of Radiology (Diagnostic).*

Fred Holt, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*

Jean D. Holter, B.S. (WVU), *Assistant Professor of Medical Technology.*

Sung Hak Hong, M.D. (Cath. Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic).*

David L. Hoover, M.D. (U. Md.), *Instructor in Medicine (Infectious Diseases), and Physician, Health Service.*

Joseph A. Horton, M.D. (Tulane U.), *Associate Professor of Radiology (Diagnostic).*

Julie A. Howell, M.P.T. (Baylor U.), *Clinical Instructor in Physical Therapy.*

Ellen E. Hrabovsky, M.D. (Vanderbilt U.), *Associate Professor of Surgery and Pediatrics.*

Francis Huber, M.D. (U. Tenn.), *Clinical Assistant Professor of Anesthesiology.*

Robert T. Humphries, M.D. (U. Va.), *Clinical Assistant Professor Emeritus of Orthopedic Surgery.*

Beatrice R. Hunter, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

Robert M. Hutton, M.D. (WVU), *Instructor in Surgery (Emergency Room).*

Richard M. Iammarino, M.D. (Stritch Sch. Med.), *Professor of Pathology; Section Chief of Clinical Pathology.*

Steven L. Inger, Ph.D. (Bowl. Grn. St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Barbara D. Ingersoll, Ph.D. (Penn St. U.), *Associate Professor of Behavioral Medicine and Psychiatry.*

James M. Irish, Ph.D. (U. Ariz.), *Assistant Professor of Physiology.*

Rabindran Israel, M.B.B.S. (Stanley Med. C.), *Clinical Assistant Professor of Pediatrics.*

Harry A. Jackson, M.D. (Med. C. Va.), *Clinical Associate Professor of Medicine (General Internal).*

John E. Jackson, M.D. (Temple U.), *Clinical Assistant Professor of Family Practice.*

Singanallur N. Jaggannathan, Ph.D. (U. Bombay), *Associate Professor of Pathology and Biochemistry.*

Abnash C. Jain, M.D. (Govt. Med. C., Patiala), *Professor of Medicine; Section Chief of Cardiology.*

Paul J. Jakubec, M.D. (U. Pitt), *Clinical Professor of Pediatrics.*

George W. Jaquiss, M.D. (U. Kan.), *Clinical Associate Professor of Otolaryngology.*

Joe N. Jarrett, M.D. (U. Penn), *Clinical Professor of Family Practice.*

Jesse J. Jenkins, III, M.D. (J. Hopkins U.), *Assistant Professor of Pathology and Pediatrics.*

Carl E. Johnson, M.D. (Northwestern U.), *Clinical Associate Professor Emeritus of Medicine.*

Jerome G. Johnson, M.D. (U. Minn.), *Clinical Assistant Professor of Surgery.*

Michael D. Johnson, Ph.D. (U. Mich.), *Assistant Professor of Physiology.*

Barbara Jones, M.D. (U. Utah), *Professor and Assistant Chairperson of Pediatrics.*

David S. Jones, M.D. (Loyola U.), Ph.D. (U. Minn.), *Professor Emeritus of Anatomy.*

Douglas Jones, M.D. (Vanderbilt U.), *Assistant Professor of Medicine, Charleston Division.*

John E. Jones, M.D. (U. Utah), *Professor of Medicine (Metabolism-Endocrinology); Dean, School of Medicine.*

Donald B. Kamerer, M.D. (Temple U.), *Clinical Associate Professor of Otolaryngology.*

Stanley J. Kandzari, M.D. (WVU), *Professor of Urology.*

Deborah A. Kania, M.S. (WVU), *Instructor in Otolaryngology.*

David A. Kappel, M.D. (WVU), *Clinical Associate Professor of Surgery.*

Joseph Kassis, M.D. (Damascus U.), *Clinical Instructor in Urology.*

Sam Katz, Ph.D. (Northwestern U.), *Professor of Biochemistry.*

Frank J. Keefer, M.D. (Geo. Wash. U.), *Clinical Associate Professor of Family Practice.*

George M. Kellas, M.D. (U. Penn), *Clinical Associate Professor of Family Practice.*

Arthur E. Kelley, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

John F. Kelley, M.D. (McGill U.), *Professor of Behavioral Medicine and Psychiatry and Pediatrics.*

John W. Kennard, M.D. (Bowman Gray Sch. Med.), *Clinical Professor of Radiology (Diagnostic).*

Roland L. Kennedy, M.D. (Ohio St. U.), *Professor of Anesthesiology.*

Robert D. Kerns, Ph.D. (U. Pitt), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

James W. Kessel, M.D. (WVU), *Clinical Assistant Professor of Anesthesiology.*

Henry L. Kettler, M.D. (WVU), *Clinical Assistant Professor of Neurology.*

Gordon S. Keyes, D.D.S. (U. Md.), *Assistant Professor of Pathology.*

Rashida A. Khakoo, M.D. (Makerere U.), *Assistant Professor of Medicine (Infectious Diseases).*

Jamal H. Khan, M.B.B.S. (King Edward Med. C.), *Clinical Associate Professor of Surgery.*

Mohammad Z. Khan, M.B.B.S. (King Edward Med. C.), *Clinical Associate Professor of Surgery.*

Chung Whan Kim, M.D. (Kyung-pook Nat'l. U.), *Clinical Instructor in Surgery.*

Jin-Chul Kim, M.D. (Med. C. Korea), *Assistant Professor of Radiology (Radiation Therapy).*

Donald L. Kimmel, Ph.D. (U. Mich.), *Professor Emeritus of Anatomy.*

Roger E. King, M.D. (WVU), *Clinical Associate Professor of Surgery.*

Billy E. Kirk, Ph.D. (Ohio St. U.), *Associate Professor of Microbiology.*

George F. Kish, M.D. (Ohio St. U.), *Assistant Professor of Surgery.*

Richard E. Klabunde, Ph.D. (U. Ariz.), *Assistant Professor of Physiology.*

Ricardo Kleiner, M.D. (U. B. Aires), *Clinical Assistant Professor of Pediatrics.*

Rolf F. Kletzien, Ph.D. (U. Wisc.), *Associate Professor of Biochemistry.*

William G. Klingberg, M.D. (Wash. U., St. Lou.), *Professor and Chairperson of Pediatrics.*

Ronica M. Kluge, M.D. (U. Fla.), *Associate Professor of Medicine; Section Chief of Infectious Diseases.*

Richard B. Knapp, M.D. (N.Y. Med. C.), *Professor and Chairperson of Anesthesiology.*

Thomas S. Knapp, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Jehoon Peter Ko, M.D. (Korea U. Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic).*

Jae Myung Koh, M.D. (Kyung-pook Nat'l. U.), *Clinical Assistant Professor of Radiology.*

Charles M. Koliner, M.D. (Columbia U.), *Associate Professor of Anesthesiology and Medicine (Critical Care).*

Martin J. Komor, M.D. (U. S.C.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Donald M. Koppel, M.D. (U. Ill.), *Clinical Associate Professor of Medicine (Hematology/Oncology).*

Ray Koppelman, Ph.D. (U. Chi.), *Professor of Biochemistry.*

Miroslav Kovacevich, M.D. (Med. Fac., U. Belgrade), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

John M. Krall, Ph.D. (U. Iowa), *Professor of Community Medicine (Biostatistics).*

Reginald F. Krause, Ph.D. (U. Rochester), M.D. (U. Vt.), *Professor Emeritus of Biochemistry.*

Dharmendra Kumar, M.D. (Patna U.), *Assistant Professor of Radiology (Diagnostic).*

Otto J. Kunst, M.D. (U. Miami), *Clinical Assistant Professor of Radiology (Diagnostic).*

Roberto E. Kusminsky, M.D. (U. B. Aires), *Assistant Professor of Surgery, Charleston Division.*

Peter P. Ladewig, M.D. (U. Berlin), *Clinical Professor Emeritus of Pathology.*

Chi Whang Lai, Ph.D. (Purdue U.), *Associate Professor of Radiology (Nuclear Medicine).*

Marcel G. Lambrechts, M.D. (Louvaine), *Clinical Assistant Professor of Pediatrics.*

James W. Lane, M.D. (U. Pitt), *Clinical Associate Professor of Urology.*

N. LeRoy Lapp, M.D. (Temple U.), *Professor of Medicine; Section Chief of Pulmonary Medicine.*

Norman J. Lass, Ph.D. (Purdue U.), *Associate Professor of Otolaryngology.*

Derrick L. Latos, M.D. (WVU), *Clinical Assistant Professor of Medicine (Nephrology).*

Lawrence M. Lavine, M.D. (Geo. Wash. U.) *Instructor in Anesthesiology.*

Robert L. Leadbetter, M.D. (WVU), *Clinical Associate Professor of Surgery.*

Jo S. Ledwell, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Alberto C. Lee, M.D. (U. S. Tomas, Manila), *Clinical Instructor in Medicine (General Internal).*

Chi Meen Lee, M.D. (Kyung-pook U.), *Clinical Assistant Professor of Urology.*

David P. Lee, M.D. (WVU), *Clinical Associate Professor of Medicine (General Internal).*

Ping Lee, Ph.D. (Duke U.), *Professor of Physiology.*

Johnsey L. Leef, M.D. (WVU), *Clinical Associate Professor of Radiology.*

Sidney C. Lerfald, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Warren D. Leslie, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Pediatrics.*

Robert A. Lewine, M.D. (U. Pitt), *Clinical Associate Professor of Pediatrics.*

Mary L. Lewis, M.D. (Emory U.), *Clinical Professor of Medicine (General Internal).*

Michael J. Lewis, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*



Josiah K. Lilly, III, M.D. (WVU), *Clinical Assistant Professor of Anesthesiology.*

Rogelio T. Lim, M.D. (U. S. Tomas, Manila), *Clinical Instructor in Medicine (General Internal).*

Romeo Y. Lim, M.D. (U. Philippines), *Clinical Associate Professor of Otolaryngology.*

David J. Lindert, M.D. (U. Ill.), *Clinical Assistant Professor of Urology.*

Harry T. Linger, M.D. (Med. C. Va.), *Clinical Instructor in Ophthalmology.*

Robert T. Linger, M.D. (Harvard U.), *Clinical Associate Professor of Surgery.*

John C. Linton, Ph.D. (Kent St. U.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Jorn-Hon Liu, M.D. (Kaohsiung Med. C.), *Associate Professor of Ophthalmology.*

Luis A. Loimil, M.D. (U. B. Aires), *Clinical Instructor in Orthopedic Surgery.*

Betholene F. Love, Ed.D. (WVU), *Professor and Program Director/Coordinator of Medical Technology.*

Diana Loveless, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*

Richard V. Lynch, M.D. (U. Penn), *Associate Professor of Medicine (Allergy and Clinical Immunology); Coordinator, Physicians Assistant Program; Physician, University Health Service.*

Lloyd B. McCabe, M.D. (St. Lou. U.), *Clinical Instructor in Otolaryngology.*

Robert E. McCafferty, Ph.D. (U. Pitt), *Professor of Anatomy.*

Michael F. McCagh, M.D. (WVU), *Clinical Instructor in Medicine (Dermatology).*

Roger L. McCauley, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

William T. McClellan, M.D. (WVU), *Clinical Instructor in Urology.*

D. Verne McConnell, M.D. (Columbia U.), *Clinical Professor of Surgery.*

Lewis H. McConnell, M.D. (WVU), *Clinical Assistant Professor of Medicine (General Internal).*

Arch T. McCoy, M.D. (Med. C. Va.), *Clinical Associate Professor of Urology.*

Leslie McCoy, M.D. (U. Mich.), *Clinical Associate Professor of Community Medicine.*

Bradford McCuskey, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Urology.*

Robert S. McCuskey, Ph.D. (Case West. Res. U.), *Professor and Chairperson of Anatomy.*

Donald E. McDowell, M.D. (Temple U.), *Clinical Professor of Surgery.*

Edward N. McIntosh, M.D. (Harvard U.), *Professor of Obstetrics and Gynecology and Medicine (Metabolism-Endocrinology).*

William J. McKay, M.D. (U. N.M.), *Adjunct Instructor in Community Medicine and Pulmonary Medicine.*

Richard McKinley, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology.*

William O. McMillan, Jr., M.D. (Duke U.), *Clinical Professor of Medicine (General Internal).*

Michael D. McNeer, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Samuel P. McNeill, M.D. (WVU), *Clinical Instructor in Family Practice.*

Joseph J. McPhillips, Ph.D. (Jeff. Med. C.), *Adjunct Professor of Pharmacology and Toxicology.*

Daniel B. MacCallum, M.D. (U. Ky.), *Clinical Assistant Professor of Medicine (General Internal).*

Kenneth G. MacDonald, M.D. (Cornell U.), *Clinical Associate Professor of Surgery.*

Alfred J. Magee, M.D. (L.I. C. Med.), *Clinical Associate Professor of Ophthalmology.*

Jamal E. Mahin, M.D. (Tehran Med. Sch.), *Assistant Professor of Pathology (Clinical Pathology).*

Daniel A. Mairs, M.D. (Duke U.), *Clinical Associate Professor of Obstetrics and Gynecology.*

Tony C. Majastro, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*

Indira Majumder, M.D. (S.C.B. Med. C.), *Clinical Instructor in Pediatrics.*

Paul F. Malone, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*

Eric P. Mantz, M.D. (WVU), *Clinical Instructor in Surgery.*

Robert Marshall, M.D. (Queen's U.), *Clinical Professor of Medicine (Cardiology).*

James D. Martin, M.D. (Vanderbilt U.), *Professor of Neurology.*

Robert B. Martin, Ph.D. (WVU), *Associate Professor of Orthopedic Surgery.*

Robert W. Martin, M.D. (Hahnemann Med. C.), *Assistant Professor of Medicine (Behavioral and Ambulatory Medicine); Physician, University Health Service.*

Orestes A. Martinez, M.D. (Fac. of Med., San Fernando), *Associate Professor of Anesthesiology.*

Stanley S. Masilamani, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine (Gastroenterology).*

John E. Mateer, M.D. (M. S. Hershey Med. Cen.), *Assistant Professor of Neurology.*

Phillip B. Mathias, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*

Andrew Matrigrano, M.D. (SUNY), *Assistant Professor of Medicine (Pulmonary Medicine)*.

Michael G. Mawhinney, Ph.D. (WVU), *Professor of Urology and Pharmacology and Toxicology*.

Ward W. Maxson, M.D. (U. Mich.), *Clinical Associate Professor of Obstetrics and Gynecology*.

Victor E. Mazzocco, M.D. (WVU), *Clinical Assistant Professor of Medicine (Metabolism-Endocrinology)*.

Charles E. Meacci, M.S. (Boston U.), *Assistant Professor of Physical Therapy*.

Catalino B. Mendoza, Jr., M.D. (Manila Centr. U.), *Clinical Associate Professor of Surgery*.

Henry F. Mengoli, Ph.D. (Cath. U. Am.), *Associate Professor of Microbiology*.

James A. Merchant, M.D. (U. Iowa), *Associate Professor (part-time) of Medicine (Pulmonary Medicine) and Community Medicine*.

D. Franklin Milam, M.D. (U. Penn), *Professor and Chairperson of Urology*.

Philip R. Miles, Ph.D. (WVU), *Adjunct Associate Professor of Physiology*.

Ronald J. Millecchia, Ph.D. (Rockefeller U.), *Associate Professor of Physiology*.

Lawrence S. Miller, M.D. (U. Va.), *Clinical Professor of Orthopedic Surgery*.

Michael Miller, Ph.D. (Penn St. U.), *Assistant Professor of Biochemistry*.

Phyllis M. Miller, M.S.W. (Purdue U.), *Instructor in Behavioral Medicine and Psychiatry, Charleston Division*.

Jovan Milutinovich, M.D. (Med. Fac. Zagreb), *Associate Professor of Medicine; Section Chief of Nephrology*.

Anthony P. Minard, Cert. PT (U. Penn), *Clinical Instructor in Physical Therapy*.

Barbara I. Moidel, M.A. (W. Mich. U.), *Clinical Assistant Professor of Otolaryngology*.

Dane W. Moore, Jr., M.S. (WVU), *Professor of Medical Technology*.

Richard A. Moran, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy*.

Walter H. Moran, M.D. (Harvard U.), *Professor of Surgery and Physiology; Director of Emergency Room*.

Michael A. Morehead, M.D. (WVU), *Clinical Assistant Professor of Neurology*.

Barbara U. Morgan, M.D. (WVU), *Clinical Assistant Professor of Neurology and Pediatrics*.

David M. Morgan, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry*.

David Z. Morgan, M.D. (Med. C. Va.), *Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Associate Dean, School of Medicine (Student Affairs)*.

Edwin J. Morgan, M.D. (U. Pitt), *Associate Professor of Medicine (Behavioral and Ambulatory Medicine) and Behavioral Medicine and Psychiatry; Medical Director, University Health Service*.

William C. Morgan, M.D. (U. Va.), *Clinical Associate Professor of Otolaryngology*.

Winfield S. Morgan, M.D. (Temple U.), *Professor of Pathology*.

Joseph B. Moriarty, Ph.D. (Fordham U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Joseph T. Morris, M.D. (Hahnemann Med. C.), *Clinical Associate Professor of Pediatrics*.

Thomas W. Mou, M.D. (U. Rochester), *Professor of Community Medicine and Medicine (General Internal); Dean, Charleston Division*.

Carlos Moya-Silva, M.D. (Nat'l. U. Colombia), *Assistant Professor of Pathology (Clinical Pathology)*.

Martha K. Mullett, M.D. (WVU), *Associate Professor of Pediatrics*.

David Z. Myerberg, M.D. (Columbia C.), *Assistant Professor of Pediatrics*.

Ganesan Nagarajan, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic)*.

Carlos A. Naranjo, M.D. (Med. C., Ecuador), *Clinical Assistant Professor of Urology*.

Phyllis Nash, M.S.W. (WVU), *Instructor in Behavioral Medicine and Psychiatry*.

Joseph F. Nataro, M.D. (U. Md.), *Clinical Assistant Professor of Pathology*.

LaRee D. Naviaux-D'Abreo, Ph.D. (Duquesne U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

William A. Neal, M.D. (WVU), *Associate Professor of Pediatrics; Section Chief of Pediatric Cardiology*.

William H. Nelson, Jr., M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry and Medicine (Behavioral and Ambulatory Medicine)*.

William R. Nelson, Ph.D. (U. Chi.), *Associate Professor of Pathology (Clinical Pathology)*.

David Nesselroade, M.D. (WVU), *Assistant Professor of Family Practice*.

Ralph H. Nestmann, M.D. (Ind. U.), *Clinical Associate Professor of Medicine (General Internal)*.

Benjamin Newman, M.D. (U. Beirut), *Clinical Associate Professor of Family Practice*.

Roger P. Nichols, M.D. (WVU), *Clinical Associate Professor of Otolaryngology*.

William E. Noble, M.D. (U. Pitt), *Clinical Assistant Professor of Medicine, Wheeling Division*.

G. Robert Nugent, M.D. (U. Cincin.), *Professor of Surgery; Chairperson, Division of Neurological Surgery.*

Robert E. O'Connor, M.D. (Harvard U.), *Clinical Associate Professor of Ophthalmology.*

Stephen A. Olenchock, Ph.D. (WVU), *Adjunct Assistant Professor of Microbiology.*

Anthony J. Oliverio, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*

William W. Orr, Jr., M.D. (Med. C. Ga.), *Assistant Professor of Behavioral Medicine and Psychiatry and Medicine (Behavioral and Ambulatory Medicine.)*

R. Wade Ortel, M.D. (U. Md.), *Professor of Medicine, Wheeling Division.*

Carl E. Ortmeier, Ph.D. (Iowa St. U.), *Adjunct Assistant Professor of Community Medicine.*

Dennis O. Overman, Ph.D. (U. Mich.), *Associate Professor of Anatomy.*

Bernadette R. Page, M.D. (Loyola-Stritch Sch. Med.), *Clinical Instructor in Surgery.*

John R. Page, M.D. (Loyola-Stritch Sch. Med.), *Clinical Assistant Professor of Surgery.*

Albert Paine, M.D. (Med. C. Va.), *Clinical Associate Professor of Otolaryngology.*

Udong Pak, M.D. (Kyung-pook U.), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Antonio Palladino, M.D. (U. Naples), *Clinical Associate Professor of Obstetrics and Gynecology.*

Louis C. Palmer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*

Joseph V. Panepinto, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Ruth A. Panepinto, Ph.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

William F. Park, M.D. (U. Md.), *Clinical Assistant Professor of Ophthalmology.*

Marie D. Parker, M.D. (U. Calif—Irvine), *Clinical Instructor in Surgery.*

Nolan C. Parsons, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*

Paul J. Parsons, B.S. (SUNY), *Assistant Professor of Physical Therapy.*

Richard S. Pataki, M.D. (N.Y. Med. C.), *Clinical Assistant Professor of Pathology.*

Robert D. Patchell, M.D. (U. Toronto), *Clinical Professor of Obstetrics and Gynecology.*

Mahendrakumar M. Patel, M.D. (Med. C. Baroda), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*

Joseph R. Patterson, M.D. (Tulane U.), *Clinical Assistant Professor of Radiology (Diagnostic).*

Denzil Patton, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Richard J. Pearson, M.D. (Cambridge U.), *Professor and Chairperson of Community Medicine; Professor of Family Practice.*

John J. Petronis, B.A. (E Stroudsburg St. C.), *Associate Professor of Physical Therapy.*

Edward L. Petsonk, M.D. (McGill U.), *Adjunct Instructor in Medicine (Pulmonary Medicine).*

Carl Pfirman, B.S. (Penn St. U.), *Clinical Instructor in Physical Therapy.*

Alfred K. Pfister, M.D. (Ind. U.), *Clinical Professor of Medicine (General Internal).*

Ruth M. (Trotter) Phillips, M.D. (J. Hopkins U.), *Associate Professor of Pediatrics.*

Richard E. Piccirillo, M.D. (WVU), *Adjunct Assistant Professor of Medicine (Pulmonary Medicine).*

George E. Pickett, M.D. (McGill U.), *Clinical Professor of Community Medicine.*

Justus C. Pickett, M.D. (Case West. Res. U.), *Professor Emeritus of Orthopedic Surgery.*

Carlin A. Pinkstaff, Ph.D. (Emory U.), *Associate Professor of Anatomy.*

Betty S. Pittman, M.A. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Arthur L. Poffenbarger, M.D. (U. Md.), *Clinical Professor of Neurology.*

Edward P. Polack, M.D. (WVU), *Clinical Assistant Professor of Surgery.*

Robert B. Point, M.D. (U. Va.), *Clinical Associate Professor of Medicine (Dermatology).*

W. Warren Point, M.D. (Harvard U.), *Professor and Assistant Chairperson of Medicine; Chief of Medicine, Charleston Division.*

Thomas W. Poland, M.D. (WVU), *Adjunct Instructor in Anesthesiology.*

Herbert H. Pomerance, M.D. (Columbia U.), *Professor and Chief of Pediatrics, Charleston Division.*

Thomas R. Poole, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*

Robert S. Pope, Ph.D. (U. N.D.), *Associate Professor of Anatomy.*

Robert S. Pore, Ph.D. (UCLA), *Associate Professor of Microbiology.*

Alexius T. Portz, Ph.D. (U. Mich.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Thomas G. Potterfield, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics.*

Roxann L. Powers, M.D. (WVU), *Instructor in Medicine (General Internal) and Physician, University Health Service.*

Lee H. Pratt, M.D. (WVU), *Clinical Assistant Professor of Neurology.*

Jack Pushkin, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*

Willard Pushkin, M.D. (Med. C. Va.), *Clinical Professor Emeritus of Medicine.*



Gina M. Puzzuoli, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Eugene A. Quarrick, Ph.D. (Syracuse U.), *Professor of Behavioral Medicine and Psychiatry.*

Cedric A. Quick, M.D. (U. Col.-Cardiff), *Professor of Otolaryngology.*

Eric L. Radin, M.D. (Harvard U.), *Professor and Chairperson of Orthopedic Surgery.*

Gale W. Rafter, Ph.D. (U. Wash.), *Professor of Biochemistry.*

Peter C. Raich, M.D. (U. Wisc.), *Professor of Medicine; Section Chief of Hematology/Oncology.*

Arunthathie Rajaratnam, M.B.B.S. (U. Ceylon), *Assistant Professor of Anesthesiology.*

Mohammed Raji, M.D. (Tabriz U.), *Assistant Professor of Radiology (Diagnostic).*

Vadrevu K. Raju, M.B.B.S. (Andhira Med. C.), *Assistant Professor of Ophthalmology.*

Richard C. Rashid, M.D. (WVU), *Clinical Associate Professor of Family Practice and Clinical Assistant Professor of Ophthalmology.*

Gerald A. Ravitz, M.D. (WVU), *Clinical Assistant Professor of Urology.*

Mark J. Reasor, Ph.D. (J. Hopkins U.), *Assistant Professor of Pharmacology and Toxicology.*

Joseph B. Reed, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Robert J. Reed, M.D. (U. Penn.), *Clinical Assistant Professor of Surgery.*

Robert B. Reger, M.S. (WVU), *Adjunct Instructor in Community Medicine.*

Charles E. Reier, M.D. (Jeff. Med. C.), *Clinical Professor of Anesthesiology.*

Frank D. Reilly, Ph.D. (U. Cincin.), *Assistant Professor of Anatomy.*

Martin D. Reiter, M.D. (Jeff. Med. C.), *Clinical Professor of Medicine (General Internal).*

Ole W. Renick, M.D. (Med. C. Va.), *Clinical Assistant Professor of Otolaryngology.*

Joseph J. Renn, III, M.D. (WVU), *Clinical Associate Professor of Medicine (Pulmonary Medicine).*

Harold Resnick, Ph.D. (U. Iowa), *Adjunct Professor of Biochemistry.*

William C. Revercomb, M.D. (Columbia U.), *Clinical Associate Professor of Medicine (General Internal).*

Randall W. Reyer, Ph.D. (Yale U.), *Professor of Anatomy.*

Joung Wye Rhee, M.D. (Seoul Nat'l. U.), *Clinical Assistant Professor of Pediatrics.*

Joe W. Rhudy, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*

Thomas L. Ritz, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Samuel K. Roberts, M.D. (WVU), *Clinical Instructor in Family Practice.*

Robert L. Robinson, Ph.D. (U. Kans.), *Professor of Pharmacology and Toxicology.*

Joan Robison, Ph.D. (U. Ga.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Satyabhilashi P. Rochlani, M.B.B.S. (U. Madras), *Associate Professor of Pathology.*

Jeanne A. Rodman, M.D. (U. Iowa), *Clinical Associate Professor of Anesthesiology.*

Nathaniel F. Rodman, M.D. (U. Penn.), *Professor and Chairperson of Pathology.*

Dorris P. Rogers, Ph.D. (U. Tex.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

John S. Rogers, M.D. (Geo. Wash. U.), *Assistant Professor of Medicine (Hematology/Oncology).*

Carl J. Roncaglione, M.D. (Med. C. Va.), *Clinical Associate Professor of Orthopedic Surgery.*

Jean D. Ross, M.D. (Harvard U.), *Associate Professor of Pediatrics, Charleston Division.*

William B. Rossman, M.D. (Ind. U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*

Robert S. Salisbury, M.D. (WVU), *Clinical Assistant Professor of Pathology.*

Eugene G. Sander, Ph.D. (Cornell U.), *Professor and Chairperson of Biochemistry.*

Ujjal S. Sandhu, M.B.B.S. (Calcutta Nat'l. Med. Inst.), *Clinical Instructor in Obstetrics and Gynecology.*

Michael A. Santer, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology).*

Paul D. Saville, M.D. (St. Geo. Med. Sch., Lond.), *Clinical Professor of Medicine (Rheumatology).*

James E. Savory, M.D. (U. Mich.), *Instructor in Medicine (General Internal) and Physician, University Health Service.*

Ronald A. Savrin, M.D. (SUNY—Upstate), *Assistant Professor of Surgery.*

Martin W. Schein, Sc.D. (J. Hopkins U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*

Merle S. Scherr, M.D. (U. Md.), *Clinical Associate Professor of Medicine (General Internal).*

Frank L. Schwartz, M.D. (WVU), *Instructor in Surgery (Emergency Room).*

Gunter Schwarzbart, M.D. (U. Basel), *Clinical Associate Professor of Surgery.*

Ronald R. Scobbo, M.D. (WVU), *Clinical Associate Professor of Medicine (General Internal).*

Narinder N. Sehgal, M.B.B.S. (Panjab U., India), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics and Gynecology, Charleston Division.*

Richard J. Seime, Ph.D. (U. Minn.), *Associate Professor of Behavioral Medicine and Psychiatry.*

Harold Selinger, M.D. (N.Y. St. U. C. Med.), *Clinical Professor of Medicine (General Internal).*

Jose M. Serrato, M.D. (Nat'l. U. Colombia), *Clinical Instructor in Urology.*

Edmund G. Settle, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

James K. Sexton, M.D. (Wk. Forest U.), *Clinical Associate Professor of Radiology (Diagnostic).*

Tahir Shafi, M.B.B.S. (Nuhtar Med. C.), *Clinical Associate Professor of Medicine (Nephrology).*

Shilbala (Sheila) Shah, M.D. (Seth G. S. Med. C.), *Associate Professor of Pathology (Clinical Pathology).*

Stanley R. Shane, M.D. (U. Kans.), *Professor of Medicine; Section Chief of Metabolism and Endocrinology; Associate Chairperson, Medicine.*

Harry L. Shannon, M.D. (Tulane U.), *Clinical Assistant Professor of Urology.*

Anne W. Sharpe, B.S. (WVU), *Assistant Professor of Medical Technology.*

George A. Shawkey, M.D. (Northwestern U.), *Clinical Assistant Professor of Pediatrics.*

Thomas K. Shehan, D.V.M. (Ohio St. U.), *Associate Professor of Pathology; Coordinator, Comparative Pathology (Animal Quarters).*

Lauralee Sherwood, D.V.M. (Mich. St. U.), *Associate Professor of Physiology.*

Earle Shoub, B.S. (Poly. Inst. Brooklyn), *Adjunct Associate Professor of Anesthesiology.*

Jeffrey S. Shultz, M.D. (WVU), *Associate Professor of Medicine; Chief of Medicine, Wheeling Division.*

Richard H. Sibley, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*

Leslie D. Simmons, M.D. (Tulane U.), *Clinical Professor of Family Practice.*

William P. Sinclair, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice.*

Wilbur Z. Sine, M.D. (WVU), *Clinical Assistant Professor of Family Practice and Behavioral Medicine and Psychiatry.*

Purendra P. Sinha, M.B.B.S. (Patna U.), *Assistant Professor of Radiology (Radiation Therapy).*

Joseph T. Skaggs, M.D. (U. Louisville), *Clinical Assistant Professor of Medicine (General Internal).*

John M. Slack, Ph.D. (U. Minn.), *Professor Emeritus of Microbiology.*

Stephen T. Slack, Ph.D. (Penn St. U.), *Assistant Professor of Radiology; Section Chief of Radiation Safety.*

Clark K. Sleeth, M.D. (U. Chi.), *Professor Emeritus of Medicine and Family Practice.*

David H. Smith, M.D. (U. Alberta), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

David J. Smith, Ph.D. (WVU), *Associate Professor of Anesthesiology and Pharmacology and Toxicology.*

James T. Smith, M.D. (U. Kans.), *Clinical Assistant Professor of Radiology (Diagnostic).*

K. Madison Smith, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*

Larry C. Smith, M.D. (Med. C. Va.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Ralph S. Smith, Jr., M.D. (Northwestern U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Robert Leslie Smith, M.D. (U. Ill.), *Associate Professor of Community Medicine and Assistant Dean, School of Medicine (Continuing Education).*

George E. Snider, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*

Irvin S. Snyder, Ph.D. (U. Kans.), *Professor and Chairperson of Microbiology.*

William G. Sorenson, Ph.D. (U. Tex), *Adjunct Assistant Professor of Microbiology.*

Suzanne S. Souther, B.S. (WVU), *Clinical Instructor in Physical Therapy.*

James T. Spencer, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Otolaryngology.*

Wayne Spiggle, M.D. (Med. C. Va.), *Clinical Instructor in Medicine (Hematology/Oncology).*

Frederick T. Sporck, M.D. (WVU), *Assistant Professor of Otolaryngology.*

Philip M. Sprinkle, M.D. (U. Va.), *Professor and Chairperson of Otolaryngology.*

David J. Srebalus, Ed.D. (Ind. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Charles Staab, M.D. (U. Pitt), *Clinical Assistant Professor of Pediatrics.*

Edwin P. Stabins, M.D. (Cornell U.), *Clinical Professor of Pediatrics.*

Eugene L. Staples, M.H.A. (U. Minn.), *Clinical Professor of Community Medicine and Behavioral Medicine and Psychiatry; Administrator, University Hospital.*

Ellen F. Starkey, M.S. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

William T. Stauber, Ph.D. (Rutgers U.), *Assistant Professor of Physiology.*

Barbara S. St. Clair, B.S. (WVU), *Clinical Instructor in Physical Therapy.*

Vilja K. Stein, M.D. (U. Penn), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Larry J. Stemple, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*

Margaret Stemple, M.D. (Rush Med. C.), *Clinical Assistant Professor of Family Practice.*

James M. Stevenson, M.D. (WVU), *Associate Professor and Chairperson of Behavioral Medicine and Psychiatry; Associate Professor of Medicine; Section Chief of Behavioral and Ambulatory Medicine.*



J. Clifford Stickney, Ph.D. (U. Minn.), *Professor Emeritus of Physiology.*  
 Robert E. Stitzel, Ph.D. (U. Minn.), *Professor and Acting Chairperson of Pharmacology and Toxicology.*  
 David A. Stoll, M.D. (U. Iowa), *Clinical Instructor in Orthopedic Surgery.*  
 Robert E. Stone, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Robert S. Strauch, M.D. (Case West. Res. U.), *Clinical Instructor in Surgery.*  
 Samuel A. Strickland, M.D. (WVU), *Clinical Assistant Professor of Ophthalmology.*  
 Ronald K. Stupar, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Balusamy Subbiah, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine (General Internal).*  
 Vadakkencheri Subramanian, M.B.B.S. (Madurai Med. C.), *Assistant Professor of Medicine (Hematology/Oncology).*  
 Karen A. Sullivan, Ph.D. (Duke U.), *Assistant Professor of Pathology (Clinical Pathology) and Microbiology.*  
 Jackie L. Summers, M.D. (WVU), *Clinical Assistant Professor of Urology.*  
 Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), *Instructor in Pediatrics.*  
 Lois V. Svoboda, M.D. (U. Chi.), *Clinical Assistant Professor of Family Practice; Physician, University Health Service.*  
 William B. Svoboda, M.D. (U. Chi.), *Associate Professor of Neurology and Pediatrics.*  
 Danna C. Swan, M.D. (WVU), *Assistant Professor of Family Practice; Physician, University Health Service.*  
 Zoltan Szalontay, M.D. (U. Zagreb), *Clinical Associate Professor of Radiology.*  
 Ernesto R. Tanguilig, M.D. (U. Philippines), *Clinical Professor of Radiology.*  
 Thomas J. Tarnay, M.D. (Columbia U.), *Professor of Surgery.*  
 Mary Ellen Tekieli, Ph.D. (U. Okla.), *Clinical Assistant Professor of Otolaryngology.*  
 John Tellers, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Barbara L. Tenney, M.D. (Jeff. Med. C.), *Associate Professor of Pediatrics.*  
 Erdogan Tercan, M.D. (Ankara U.), *Clinical Associate Professor of Anesthesiology.*  
 Marilyn M. Thatcher, B.A. (U. Tenn.), *Clinical Instructor in Pediatrics.*  
 John A. Thomas, Ph.D. (St. U. Iowa), *Professor of Pharmacology and Toxicology; Associate Dean, School of Medicine (Administration).*  
 Herbert A. Thompson, Ph.D. (U. Kans.), *Assistant Professor of Microbiology.*  
 Robert C. Thompson, Jr., M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Lawrence B. Thrush, Sr., M.D. (U. Penn.), *Clinical Instructor in Surgery.*  
 Lawrence B. Thrush, Jr., M.D. (WVU), *Assistant Professor of Medicine; Section Chief of Allergy and Clinical Immunology.*  
 Peter K. Thrush, M.D., (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*  
 George E. Toma, Jr., M.D. (Ohio St. U.), *Clinical Assistant Professor of Ophthalmology.*  
 Robert Tomhave, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Joseph B. Touma, M.D. (Damascus U.), *Clinical Assistant Professor of Otolaryngology.*  
 Judith A. Traister, Cert. PT (D. T. Watson Sch. of Psy.), *Clinical Instructor in Physical Therapy.*  
 Shirley W. Trammell, M.D. (Tulane U.), *Clinical Instructor in Surgery.*  
 Donald C. Trapp, M.D. (Temple U.), *Clinical Associate Professor of Urology.*  
 John W. Traubert, M.D. (Ohio St. U.), *Professor and Chairperson of Family Practice.*  
 John W. Trenton, M.D. (U. Penn.), *Clinical Professor of Surgery.*  
 Robert R. Trotter, M.D. (Temple U.), *Professor and Chairperson of Ophthalmology.*  
 George P. Tryfiates, Ph.D. (Rutgers U.), *Associate Professor of Biochemistry.*  
 Pat A. Tuckwiler, M.D. (U. Chi.), *Clinical Professor Emeritus of Medicine.*  
 William T. Tweel, M.D. (Med. C. Va.), *Clinical Assistant Professor of Family Practice.*  
 Irma H. Ullrich, M.D. (U. Minn.), *Associate Professor of Medicine (Metabolism-Endocrinology).*  
 Isidro P. Uy, M.D. (U. Santo Tomas), *Clinical Instructor in Pediatrics.*  
 Knox Van Dyke, Ph.D. (St. Lou. U.), *Professor of Pharmacology and Toxicology.*  
 Angel Vasquez-Lopez, M.D. (U. P.R.), *Professor of Family Practice and Pediatrics.*  
 John S. Veach, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Alfredo C. Velasquez, M.D. (U. Santo Tomas), *Clinical Associate Professor of Surgery.*  
 Robert W. Veltri, Ph.D. (WVU), *Professor of Microbiology and Otolaryngology.*  
 Purushattam L. Verma, M.D. (Nagpur U.), *Clinical Instructor in Pediatrics.*  
 Peter L. Villani, M.D. (WVU), *Assistant Professor of Surgery.*  
 Herbert G. Voelz, Dr.Rer.Nat. (U. Greifswald, Ger.), *Professor of Microbiology.*  
 Edward Voss, Jr., M.D. (U. Buffalo), *Clinical Associate Professor of Surgery.*  
 Thomas G. Wack, M.D. (WVU), *Clinical Instructor in Family Practice.*  
 John A. Wade, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Gregory R. Wagner, M.D. (Einstein C. Med.), *Clinical Instructor in Community Medicine.*  
 Robert H. Waldman, M.D. (Wash. U., St. Lou.), *Professor and Chairperson of Medicine; Professor of Behavioral Medicine and Psychiatry.*



Brian K. Walker, M.D. (Cornell U.), *Assistant Professor of Medicine (Hematology/Oncology).*  
 David K. Walker, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Elizabeth R. Walker, Ph.D. (WVU), *Assistant Professor of Anatomy.*  
 Albert L. Wanner, M.D. (U. Pitt), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Stephen D. Ward, M.D. (U. Pitt), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Herbert E. Warden, M.D. (U. Chi.), Ph.D. (U. Ill.), *Professor of Surgery.*  
 Stafford G. Warren, M.D. (U. Rochester), *Clinical Associate Professor of Medicine (General Internal).*  
 Alvin L. Watne, M.D. (U. Ill.), *Professor and Chairperson of Surgery; Professor of Behavioral Medicine and Psychiatry.*  
 Deleno H. Webb, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Kenneth C. Weber, Ph.D. (U. Minn.), *Adjunct Professor of Physiology.*  
 Harry S. Weeks, Jr., M.D. (U. Md.), *Clinical Professor of Anesthesiology.*  
 Charles C. Weise, M.D. (U. Penn), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Roland J. Weisser, Jr., M.D. (WVU), *Associate Professor of Family Practice.*  
 William A. Welton, M.D. (U. Md.), *Professor of Medicine; Section Chief of Dermatology.*  
 Stanley Wendkos, M.S. (Temple U.), *Clinical Instructor in Physical Therapy.*  
 David P. Westfall, Ph.D. (WVU), *Professor of Pharmacology and Toxicology.*  
 Robert T. Westmoreland, M.D. (Bowman Gray), *Clinical Associate Professor of Anesthesiology.*  
 Frances D. Wheeler, M.S. (San Fran. St. C.), *Instructor in Behavioral Medicine and Psychiatry.*  
 Charles E. Whitaker, M.D. (U. Pitt), *Clinical Assistant Professor of Otolaryngology.*  
 Charles A. White, M.D. (U. Utah), *Professor and Chairperson of Obstetrics and Gynecology.*  
 Kenneth L. Wible, M.D. (Jeff. Med. C.), *Associate Professor of Pediatrics.*  
 David W. Wilder, M.D. (U. Ore.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Isaiah A. Wiles, M.D. (U. Chi.), *Clinical Associate Professor Emeritus of Community Medicine.*  
 James H. Wiley, M.D. (Med. C. Va.), *Clinical Associate Professor of Orthopedic Surgery.*  
 Ronald L. Wilkinson, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 David H. Williams, M.D. (Cornell U.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Patricia W. Williams, M.D. (WVU), *Assistant Professor of Medicine (Behavioral Medicine and Psychiatry).*  
 Patrick C. Williams, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 T. Walley Williams, Ph.D. (U. Pitt), *Professor Emeritus of Anatomy.*  
 Robert S. Wilson, M.D. (J. Hopkins U.), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Mary J. Wimmer, Ph.D. (U. N.C.), *Assistant Professor of Biochemistry.*  
 Mosley H. Winkler, M.D. (Med. C. Va.), *Clinical Associate Professor of Ophthalmology.*  
 George H. Wirtz, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry.*  
 Loraine T. Withersty, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Kathleen Withrow, B.S. (Loma Linda U.), *Clinical Instructor in Physical Therapy.*  
 Michael Wockenfuss, M.A. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry, Charleston Division.*  
 John J. Wolf, Jr., M.D. (Wk. Forest U.), *Clinical Assistant Professor of Pediatrics.*  
 Wu Shyong Wu, M.D. (Nat'l. Taiwan U.), *Clinical Instructor in Medicine (Nephrology).*  
 William D. Wyant, M.S.E., M.P.A. (WVU), *Assistant Professor of Community Medicine.*  
 Merrill Wymer, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 David B. Yelton, Ph.D. (U. Mass.), *Associate Professor of Microbiology.*  
 Jeffrey M. Yost, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 George L. Zaldivar, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
 John J. Zarski, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Frank G. Zavisca, M.D. (SUNY—Buff.), Ph.D. (MIT), *Assistant Professor of Anesthesiology.*  
 John F. Zeedick, M.D. (U. Pitt), *Clinical Associate Professor of Anesthesiology.*  
 Steve M. Zekan, M.D. (WVU), *Assistant Professor of Surgery, Charleston Division.*  
 Bernard Zimmermann, M.D. (Harvard U.), Ph.D. (U. Minn.), *Professor of Surgery.*

# School of Nursing

Brenda Kay Battles, R.N., M.S. (Tex. Wom. U.), *Instructor*.  
Linda J. Belis, R.N., M.S.N. (WVU), *Lecturer (part-time)*.  
Shirley K. Bell, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.  
Joan Bilitski, R.N., M.S.N. (WVU), *Instructor*.  
Mary Frances Borgman, R.N., M.Ed. (Duquesne U.), *Associate Professor; Chairperson, Senior Faculty*.  
Mary Jo Butler, R.N., M.S. (U. Md.), *Assistant Professor; Chairperson, Charleston Division*.  
Marie E. Caruso, R.N., M.S. (U. Ariz.), *Instructor*.  
Doris K. Clearage, R.N., M.S. (U. Ariz.), *Assistant Professor*.  
Patricia A. Diehl, R.N., M.A. (WVU), *Associate Professor*.  
O. B. Fawley, M.S.W. (WVU), *Adjunct Instructor*.  
Jane Firestone, R.N., M.S.N. (U. Fla.), *Instructor*.  
Marguerite A. Gabriele, R.N., M.N. (Yale U.), *Lecturer (part-time)*.  
Sharron Graham, R.N., M.S. (U. Penn), *Assistant Professor*.  
Suzanne W. Gross, R.N., M.N.Ed. (U. Pitt), *Assistant Professor*.  
Nilda Guarda, R.N., M.S.N. (WVU), *Instructor*.  
Debra L. Harr, R.N., M.P.H. (J. Hopkins U.), *Assistant Professor; Acting Chairperson, Sophomore Faculty*.  
Kathleen Heverley, R.N., M.S. (Boston U.), *Instructor*.  
Jean M. Hoff, R.N., M.P.H. (U. Pitt), *Associate Professor; Assistant to Dean*.  
Annette L. James, R.N., M.S.N.Ed. (U. Rochester), *Assistant Professor*.  
Lorita D. Jenab, R.N., Ed.D. (Columbia U.), *Professor and Dean*.  
Patricia Johnston, R.N., M.S.N. (Ohio St. U.), *Instructor, Charleston Division*.  
Christina Joy, R.N., M.S. (U. Colo.), *Instructor*.  
Judith C. Kandzari, R.N., M.A. (WVU), *Instructor*.  
Nancy A. Koontz, R.N., M.S.N. (U. Md.), *Associate Professor*.  
Pauline Lappe, R.N., M.P.H. (U. Pitt), *Instructor*.  
Sharon Lavine, R.N., M.S.N. (N. Ill. U.), *Instructor*.  
Gaynelle McKinney, R.N., M.S.N.Ed. (Ind. U.), *Professor; Chairperson, Continuing Education*.  
Virginia G. Mahaven, R.N., M.S.N. (WVU), *Instructor*.  
Margaret A. Marcinek, R.N., M.S. (U. Md.), *Assistant Professor*.  
Kathleen H. Marsland, R.N., M.S. (U. Colo.), *Assistant Professor*.  
W. Annette Massey, R.N., M.S.N. (Yale U.), *Associate Professor*.  
Karen E. Miles, R.N., M.S.N. (WVU), *Instructor*.  
Victoria Miller, R.N., M.S.N. (U. Minn.), *Assistant Professor*.  
Marsha F. Mitchell, R.N., M.S.N. (WVU), *Instructor*.  
Cynthia A. Neely, R.N., M.S. (WVU), *Instructor, Charleston Division*.  
Lois E. O'Kelley, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.  
C. Lynne Ostrow, R.N., M.S. (U. Cal.), *Assistant Professor*.  
Joan Paternoster, R.N., M.S. (Adelphi U.), *Instructor*.  
Carol M. Patton, R.N., B.S.N. (Penn. St. U.), *Clinical Instructor*.  
Jacqueline W. Riley, R.N., M.N. (U. Fla.), *Assistant Professor*.  
Martha S. Rock, R.N., M.S.N. (Ohio St. U.), *Assistant Professor; Chairperson, Junior Faculty*.  
Anne M. Rokenstein, R.N., M.S.N.Ed. (Cath. U. Am.), *Associate Professor*.  
Judith T. Romano, R.N., M.S.N. (WVU), *Instructor*.  
Kathleen Schoonover, R.N., B.S.N. (WVU), *Clinical Instructor*.  
Jane A. Shrewsbury, R.N., M.N.Ed. (U. Pitt), *Associate Professor*.  
Frances G. Snodgrass, R.N., M.A. (WVU), *Instructor, Charleston Division*.  
Natalie M. Stafford, R.N., M.N. (U. Pitt), *Associate Professor*.  
Jacqueline Stemple, R.N., M.S.N. (WVU), *Visiting Assistant Professor*.  
Fredona E. Stenger, R.N., M.S.N. (Boston U.), *Associate Professor*.  
Karen E. Whitley, B.S.N. (E. Tenn. St. U.), *Clinical Instructor*.  
Beverly Zinn, B.S.N. (WVU), *Clinical Instructor*.

# School of Pharmacy

Scot A. Anderson, B.S. (WVU), *Clinical Instructor*.  
Louis J. Anile, B.S. (Duquesne U.), *Clinical Instructor*.  
Irma M. Anido, B.S. (WVU), *Instructor in Pharmacy*.  
H. John Baldwin, Ph.D. (Purdue U.), *Associate Professor of Pharmacy Administration; Coordinator, Administrative and Behavioral Sciences*.  
James D. Bartsch, B.S. (U. Wisc.), *Clinical Instructor*.  
John U. Bell, Ph.D. (U. Dalhousie), *Assistant Professor (part-time) of Pharmacology and Toxicology*.  
Bruce A. Berger, Ph.D. (Ohio St. U.), *Assistant Professor of Pharmacy Administration*.  
N. S. Bovenizer, B.S. (Ohio North. U.), *Clinical Instructor*.  
Calvin C. Brister, Ph.D. (U. Miss.), *Associate Professor of Biopharmacy*.  
James A. Calemine, B.S. (WVU), *Clinical Instructor*.  
David M. Caplan, B.S. (WVU), *Clinical Instructor*.  
Harry A. Comm, B.S. (WVU), *Clinical Instructor*.  
John E. Corkrean, B.S. (WVU), *Clinical Instructor*.  
Timothy R. Covington, Pharm.D. (U. Mich.), *Associate Professor of Clinical Pharmacy; Coordinator, Clinical Pharmacy and Pharmaceutical Services*.  
Stephen D. Crawford, B.S. (WVU), *Clinical Instructor*.  
Scott R. Criss, B.S. (WVU), *Clinical Instructor*.  
S. A. Cunningham, C.P.A., B.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration*.  
Betty M. Daniels, M.S. (U. N.C.), *Associate Professor of Hospital Pharmacy*.  
Lou DeBone, B.S. (Duquesne U.), *Clinical Instructor*.  
Cinda Deem, B.S. (WVU), *Clinical Instructor*.  
Judith M. Deglin, Pharm.D. (Phila. C. Pharm.), *Assistant Professor of Clinical Pharmacy*.  
Stuart M. Deglin, M.D. (Jeff. Med. C.), *Clinical Assistant Professor*.  
James J. Doyle, B.S. (WVU), *Clinical Instructor*.  
John J. Egan, B.S. (WVU), *Clinical Instructor*.  
Robert Flanagan, B.S. (U. Cincin.), *Clinical Instructor*.  
Jack E. Fruth, B.S. (Ohio St. U.), *Clinical Instructor*.  
Barbara J. Gastineau, B.S. (WVU), *Clinical Instructor*.  
Kenneth H. Gianettino, B.S. (WVU), *Clinical Instructor*.  
Douglas L. Gill, B.S. (WVU), *Lecturer in Pharmacy*.  
Harry A. Goodykoontz, B.S. (WVU), *Clinical Instructor*.  
John W. Griffith, B.S. (Ohio St. U.), *Clinical Instructor*.  
Willard S. Griffith, B.S. (Cincin. C. Pharm.), *Clinical Instructor*.  
Harold H. Harper, M.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration*.  
Robert E. Hickman, B.S. (U. Cincin.), *Clinical Instructor*.  
L. Dean Holmes, B.S. (WVU), *Clinical Instructor*.  
Stephen A. Howard, Ph.D. (U. Mich.), *Associate Professor of Pharmacy*.  
Robert H. Hoy, Pharm.D. (U. Cal.), *Assistant Professor of Clinical Pharmacy*.  
Arthur I. Jacknowitz, Pharm.D. (Phila. C. Pharm.), *Associate Professor of Clinical Pharmacy*.  
Richard Jarvis, B.S. (WVU), *Clinical Instructor*.  
Robert Johnson, B.S. (U. Iowa), *Clinical Instructor*.  
Patricia Johnston, B.S. (WVU), *Clinical Instructor*.  
Deborah B. Jones, B.S. (WVU), *Clinical Instructor*.  
Ronald Jones, B.S. (WVU), *Clinical Instructor*.  
Francis Judy, B.S. (WVU), *Clinical Instructor*.  
Steven Judy, B.S. (WVU), *Clinical Instructor*.  
Guy Lang, B.S. (WVU), *Clinical Instructor*.  
James Kai-Jin Lim, Ph.D. (U. N.C.), *Professor of Pharmaceutics*.  
Robert T. Lindsay, M.S. (Mass. C. Pharm.), *Clinical Instructor*.  
Buford T. Lively, M.S. (Marshall U.), *Lecturer in Pharmacy*.  
Robert B. Lowe, Pharm.D. (U. Mich.), *Clinical Associate Professor*.  
Daniel Lusk, B.S. (WVU), *Clinical Instructor*.  
Louis A. Luzzi, Ph.D. (U. R.I.), *Dean and Professor of Pharmaceutics*.  
Joseph K. H. Ma, Ph.D. (Duquesne U.), *Assistant Professor of Medicinal Chemistry*.  
Carl J. Malanga, Ph.D. (Fordham U.), *Professor of Biopharmacy; Coordinator, Basic Pharmaceutical Sciences*.  
Mary Lou Malanga, B.S. (Fordham U.), *Clinical Instructor*.  
Carroll Martin, B.S. (WVU), *Clinical Instructor*.  
Robert H. Matheny, B.S. (WVU), *Clinical Instructor*.  
John W. Mauger, Ph.D. (U. R.I.), *Professor of Pharmacy*.  
Ronald W. Meredith, B.S. (WVU), *Clinical Instructor*.  
Vernon R. Midcap, B.S. (WVU), *Clinical Instructor*.



Sylvia Miles, Pharm.D. (Med. U. S.C.), *Instructor in Clinical Pharmacy*.  
 John E. Miller, B.S. (WVU), *Clinical Instructor*.  
 Richard P. Miller, Ph.D. (U. Iowa), *Assistant Professor of Biopharmaceutics*.  
 Kenneth Muha, B.S. (U. Ga.), *Clinical Instructor*.  
 Donn Neuman, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Frank D. O'Connell, Ph.D. (Purdue U.), *Assistant Dean and Professor of Pharmacognosy*.  
 John P. O'Donnell, Ph.D. (U. Iowa), *Assistant Professor of Medicinal Chemistry*.  
 Janice N. Olive, B.S. (WVU), *Clinical Instructor*.  
 Robert B. Pierce, B.S. (WVU), *Clinical Instructor*.  
 John P. Plummer, B.S. (WVU), *Clinical Instructor*.  
 William Plyburn, B.S. (U. Cincin.), *Clinical Instructor*.  
 Gregory A. Prario, B.S. (WVU), *Clinical Instructor*.  
 Terrence S. Prettyman, B.S. (WVU), *Clinical Instructor*.  
 Woodrow J. Proveaux, Pharm.D. (U. Mich.), *Assistant Professor of Clinical Pharmacy*.  
 David A. Riley, Ed.D. (U. Ga.), *Assistant Professor of Pharmacy Administration; Coordinator of Continuing Education*.  
 Paul Ritchie, B.S. (WVU), *Clinical Instructor*.  
 Harry Scott, B.S. (WVU), *Clinical Instructor*.  
 Kathryn Sensabaugh, B.S. (WVU), *Lecturer in Clinical Pharmacy*.  
 A. Ray Shaw, B.S. (WVU), *Clinical Instructor*.  
 Clara Fay G. Skarzenski, B.S. (WVU), *Instructor in Pharmacy*.  
 Maynard Slaven, B.S. (WVU), *Clinical Instructor*.  
 Benton B. Smith, B.S. (WVU), *Clinical Instructor*.  
 Everett B. Stanley, B.S. (WVU), *Clinical Instructor*.  
 Gilbert A. Steiner, Pharm.D. (Wayne St. U.), *Assistant Professor of Clinical Pharmacy*.  
 Robert Stout, B.S. (WVU), *Clinical Instructor*.  
 Eugene S. Stratford, Ph.D. (Ohio St. U.), *Associate Professor of Medicinal Chemistry*.  
 Basil G. Swisher, M.S. (WVU), *Adjunct Instructor in Pharmacy Administration*.  
 Robert H. Taylor, B.S. (WVU), *Clinical Instructor*.  
 Monika Tonkovich, Pharm.D. (SUNY), *Clinical Instructor*.  
 Edward A. Toompas, B.S. (WVU), *Clinical Instructor, Charleston Division*.  
 John F. Tourville, Pharm.D. (SUNY), *Assistant Professor of Clinical Pharmacy*.  
 Charles Turk, B.S. (WVU), *Clinical Instructor*.  
 Irvin VanMeter, B.S. (WVU), *Clinical Instructor*.  
 Pamela Wells, Pharm.D. (U. Cincin.), *Clinical Instructor*.  
 William Winsley, M.S. (Ohio St. U.), *Instructor in Clinical Pharmacy*.  
 Albert F. Wojcik, Ph.D. (U. Pitt), *Professor of Pharmacy Administration*.  
 Fred L. Zicafoose, B.S. (WVU), *Clinical Instructor*.  
 John F. Ziolkowski, M.S. (Brooklyn C. Pharm.), *Clinical Instructor*.

## Medical Center Staff

- Margaret P. Abbott, M.P.H. (U. Minn.), *Director, Dietetics Department, University Hospital.*  
Marguerite E. Abel, B.S.L.S. (U. Ill.), *Assistant Librarian.*  
John Ambrose, *Superintendent, Maintenance.*  
Douglas A. Clark, M.H.A. (U. Minn.), *Associate Administrator; and Clinic Manager, University Hospital.*  
Maureen Conley, M.S.L.S. (U. Pitt), *Network Librarian.*  
Glenn D. Crowe, B.A. (U. N.C.), *Assistant to Vice-President—Health Sciences.*  
Betty M. Daniels, M.S. (U. N.C.), *Chief, Pharmacy Services, University Hospital.*  
Charles E. Flink, M.B.A. (WVU), *Associate Administrator, University Hospital.*  
Elizabeth S. Furfari, B.S.J. (WVU), *Information Officer.*  
Barbara L. Gould, M.A. (J. Hopkins U.), *Supervisor, Medical Illustration.*  
Harold H. Harper, M.S. (WVU), *Assistant to Vice-President—Health Sciences.*  
Gloria J. Heard, *Supervisor, Biomedical Photography.*  
Don E. Killen, M.S.W. (U. Pitt), *Director, Social Services, University Hospital.*  
Linda M. Jacknowitz, M.S.L.S. (SUNY), *Audiovisual Librarian.*  
Lee E. McIntyre, *Supervisor, Electronics Laboratory.*  
J. Allyson McKee, M.S.L.S. (U. Pitt), *Technical Services Librarian.*  
Fred S. Marstiller, *Supervisor, Audiovisual Television.*  
Kathleen A. Moore, B.S. (Alderson-Broadbush C.), *Associate Director, Nursing Service, University Hospital.*  
Anna Moson, M.A. (U. Pitt), *Director, Nursing Service, University Hospital.*  
Robert L. Murphy, M.S.L.S. (Cath. U. Am.), *Director, Medical Center Learning Resources Center.*  
Irene J. Roby, *Administrative Assistant, Admissions and Records.*  
Sue Smallwood, B.S. (W. Va. Wesl. C.), *Associate Director, Dietetics, University Hospital.*  
Jeffrey M. Stull, B.A. (WVU), *Medical Records Supervisor, University Hospital.*  
J. Richard Toren, B.S.J. (WVU), *Associate Director, Public Affairs/Medical Center News Service.*  
Bernard G. Westfall, M.S. (WVU), *Associate Administrator, Finance and Systems, University Hospital.*  
Mary Ellin Wylie, B.A. (WVU), *Information Officer.*

# 1980

JANUARY	FEBRUARY	MARCH	APRIL
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
MAY	JUNE	JULY	AUGUST
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

# 1981

JANUARY	FEBRUARY	MARCH	APRIL
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
MAY	JUNE	JULY	AUGUST
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31





Medical Education Building of the Charleston Division—  
WVU Medical Center.



University Hospital.

1980-81 Medical Center Catalog  
West Virginia University  
Office of Admissions and Records  
Morgantown, WV 26506

West Virginia University Bulletin  
(USPS 676-980)  
Second Class Postage Paid at  
Morgantown, WV 26506

Entered at Morgantown, WV  
as second-class matter under  
Act of August 24, 1912

---

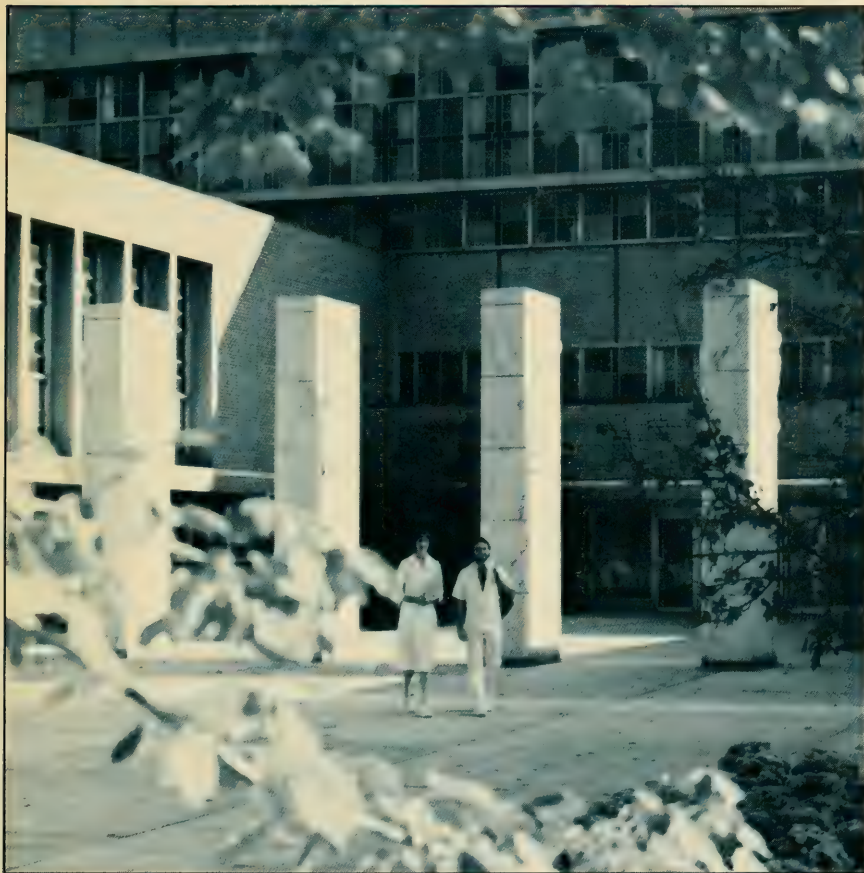
---



Prod-

Class of 1982

# WEST VIRGINIA UNIVERSITY BULLETIN



MEDICAL CENTER  
CATALOG

1981-82



Cover: Sculptured pylons in front of the Basic Sciences Building depict milestones in the health sciences.



# West Virginia University Medical Center 1981-82 Catalog

---

## Medical Center Basic Sciences School of Dentistry

Dental Hygiene

## School of Medicine

Medical Technology

Physical Therapy

## School of Nursing

## School of Pharmacy

*The 1981-82 West Virginia University Medical Center Catalog must be considered as a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. The courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Board of Regents, the administrators of the University, and the faculties of schools and colleges in order to best meet the goals and objectives of the University. The University therefore reserves the right to change, delete, supplement or otherwise amend at any time the information, course offerings, requirements, rules and policies contained, herein without prior notice.*

*West Virginia University is an Equal Opportunity-Affirmative Action institution. In compliance with Federal Executive Order No. 11246 as amended, Title VII of the Civil Rights Act, West Virginia Human Rights Act Title IX (Educational Amendments of 1972), Sections 503 and 504 of the Rehabilitation Act of 1973, and other applicable laws and regulations, the University provides equal opportunity to all prospective and current members of the student body, faculty, and staff on the basis of individual qualifications and merit without regard to race, sex, religion, age, national origin, or handicap, as identified and defined by law.*

*The University neither affiliates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, color, age, religion, sex, national origin, or handicap, as defined by applicable laws and regulations.*

*—Office of the President*

## West Virginia Board of Regents

950 Kanawha Boulevard, East

Charleston, WV 25301

Forrest L. Blair, Walker

Andrew L. Clark, Princeton

Sue Seibert Farnsworth, Wheeling

Paul J. Gilmer, Charleston

Edward H. Greene, Huntington

Russell L. Isaacs, Charleston

Albert M. Morgan, Morgantown

John W. Saunders, Beckley

Verl W. Snyder, Berkeley Springs

Francis K. Aldred, ex officio, Huntington

James M. Scott, ex officio, Fairmont

Roy Truby, ex officio, Charleston

Raymond R. Ramsey, Jr., *Chancellor*, Charleston

## West Virginia University Advisory Board

Office of the President

Morgantown, WV 26506

J. Reginald Dietz, *Chairman*, Weirton

James H. Harless, *Vice-Chairman*, Gilbert

Robert E. Maxwell, Elkins

Richard A. Raese, Morgantown

Hazel L. Ruby, Morgantown

Fred R. Toothman, Huntington

Charles C. Wise, Jr., Charleston

Harold J. Shamberger, *Secretary*

Gene A. Budig, *President*

West Virginia University Bulletin (USPS 676-980)

Series 81, No. 8-1, February, 1981

Issued Monthly in January, February, April, July, and October;  
three times in March; and twelve times in June

Second-class postage paid at Morgantown, WV 26506



# Contents

- University Calendar, 1981-82 .....4
- West Virginia University Medical Center .....5
  - University Hospital.....5
    - Radiologic Technology .....6
    - Coordinated Undergraduate Dietetics Program.....6
  - Dental Clinic .....7
  - University Health Service .....7
  - Library .....7
- Admissions .....7
  - Admission to Medical Center Programs .....7
  - Admission to WVU .....8
  - Admission of Transfer Students .....9
  - Admission of Special Students .....10
  - Admission of Post-Baccalaureate Students .....10
  - Admission of Foreign Students .....10
  - Admission of Veterans .....12
  - Readmission.....12
- Fees and Expenses .....12
- Health Science Programs at WVU.....13
- Residential Status for Admission and Fee Purposes.....17
- Regulations Affecting Degrees .....19
- Medical Center Basic Sciences .....34
  - Anatomy.....34
  - Biochemistry .....37
  - Conjoined Basic Sciences Courses .....39
  - Microbiology .....39
  - Pathology .....42
  - Pharmacology and Toxicology.....43
  - Physiology .....45
- School of Dentistry .....49
  - Doctor of Dental Surgery Program.....49
  - Endodontic Program .....61
  - Orthodontic Program.....63
  - Dental Hygiene Program.....64
- School of Medicine.....69
  - Medical Technology .....83
  - Division of Physical Therapy .....89
- School of Nursing.....94
- School of Pharmacy.....103
- Faculty and Staff .....113

Edited by Stanley J. Nels,  
*Associate University Editor*

# University Calendar, 1981-82

## Summer Sessions, 1981

May 18, Monday	Registration, First Summer Session
May 18, Monday	First Classes
May 19, Tuesday	Malcolm X's Birthday—Day of Special Concern
May 25, Monday	Memorial Day Recess
June 30, Tuesday	Last Classes
June 30, Tuesday	Registration, Second Summer Session
July 1, Wednesday	First Classes
July 3, Friday	Independence Day Recess
August 12, Wednesday	Last Classes

## First Semester, 1981-82

August 20, 21, Thursday and Friday	New Student Orientation
August 21, Friday	Registration
August 24, Monday	First Classes
September 7, Monday	Labor Day Recess
September 29-30, Tuesday and Wednesday	Rosh Hashanah— Days of Special Concern
October 8, Thursday	Yom Kippur—Day of Special Concern
October 9, Friday	Mid-Semester
October 9, Friday	Mid-Semester Reports Due
November 21, Saturday, to November 29, Sunday, incl.	Thanksgiving Recess
December 11, Friday	Last Classes
December 14, Monday, to December 19, Saturday, incl.	Final Examinations
December 20, Sunday, to January 7, Thursday, incl.	Christmas Recess

## Second Semester, 1981-82

January 8, Friday	Registration
January 11, Monday	First Classes
January 15, Friday	Martin Luther King's Birthday— Day of Special Concern
February 7, Sunday (not a holiday)	West Virginia University Day
February 15, Monday	Washington's Birthday Recess
February 26, Friday	Mid-Semester
February 26, Friday	Mid-Semester Reports Due
April 3, Saturday, to April 12, Monday, incl.	Spring Recess
April 12, Monday	Easter Recess
April 13, Tuesday	Faculty Assembly
April 30, Friday	Last Classes
May 3, Monday, to May 8, Saturday, incl.	Final Examinations
May 10, Monday	Grade Reports for All Graduates Due in Dean's Office
May 11, Tuesday	Dean's Reports for All Graduates Due in Office of Admissions and Records
May 15, Saturday	Alumni Day
May 16, Sunday	Commencement

*The academic year is divided into two semesters of approximately seventeen weeks each and summer sessions.*

# West Virginia University Medical Center

West Virginia University Medical Center is the keystone of a statewide structure for educating health professionals and improving the health of all West Virginians. It houses schools of dentistry, medicine, nursing, pharmacy, and a 440-bed teaching hospital. Allied health professionals and basic science specialists also are educated here. In the two decades since it was established, total enrollment has passed the 1,500 mark.

It is the center, too, of statewide continuing education programs and a referral center for physicians and other health professionals in all sections of West Virginia. Telephone consultations on a two-hour callback basis, with complete followup, are available to physicians statewide.

Until 1960, pharmacists were the only health professionals who could obtain all their education at the state university. Medicine offered only a two-year program, and nursing and dentistry none. The transition began in 1951 when the Legislature authorized construction of the WVU Medical Center and levied a penny-a-bottle tax on soft drinks to provide basic financing.

The WVU Medical Center was planned as a single structure—Basic Sciences Building and University Hospital under one roof—on the Evansdale Campus north of the Downtown Campus. The Basic Sciences portion opened in 1957; first degrees were awarded in the early 1960s. Dentistry now enrolls 240 students, medicine more than 350, and nursing 300 in four-year programs; and pharmacy 205 in the three professional years of a five-year curriculum. Dental hygiene, medical technology, and physical therapy students number nearly 200; basic science students 90; and post-doctoral residents 180.

In 1972, WVU and the Charleston Area Medical Center—the state's largest hospital complex—began a partnership to develop medical and other health science programs. They were based in hospitals and other facilities already in place, but in 1977 a \$6 million Medical Education Building was opened. It serves as the center for the clinical education programs. The Charleston Division of the WVU Medical Center expands the patient base and student capacity for WVU's health sciences educational programs. It serves students in dentistry, medicine, nursing, pharmacy, and allied health fields, in addition to offering specialty training.

In 1974 the WVU School of Medicine established the Wheeling Division in cooperation with Ohio Valley General Hospital and Wheeling Hospital. The program is overseen by a joint Wheeling Area Medical Education Committee and offers elective opportunities for fourth-year students and postgraduate specialty training.

At the WVU Medical Center, as well as its Charleston Division and the School of Medicine's Wheeling Division, equal emphasis is given to teaching, research, and service—the pillars of sound health sciences education. Instruction is closely integrated among the health sciences, and there is a continuous search for improved ways of teaching.

## University Hospital

West Virginia University Hospital is a 440-bed health center where education of students and advancement of knowledge goes hand in hand with the best in medical

Nonacademic policies and regulations affecting students are summarized in the *Student Handbook*. Every student is urged to obtain a copy of the *Student Handbook* from the Office of Student Affairs, 205 Moore Hall.



care. It is the hub of the Medical Center complex, providing the training ground where students learn the science and art of caring for patients.

Services in some 50 specialties are provided for bed patients as well as through clinics where more than 2,000 patients are seen weekly. Emergency Room service is provided around the clock, with more than 39,000 visits recorded annually.

Patients come to University Hospital and its clinics from all parts of West Virginia. They find expertise, equipment, and experience sometimes not available at other West Virginia hospitals, in areas such as pain control, bladder pacemakers, radiation therapy, pediatric surgery, and cleft palate repair.

Clinic management operations have been streamlined to meet a growing public demand for efficient, quality, personalized health care. All internal medicine subspecialty clinics have been merged into a new Group Medicine Clinic, providing a multidisciplinary team to handle almost any health problem. This outstanding clinic program has won the support of the Robert Wood Johnson Foundation with a \$783,000 four-year grant, one of 15 awarded among 51 competitors. Other recipients included university teaching hospitals of Vanderbilt, Yale, Johns Hopkins, UCLA, Georgetown, and the University of California at San Francisco.

## Radiologic Technology

A two-year course for radiologic technologists is offered by the Department of Radiology at University Hospital. This course covers anatomy and physiology, radiologic physics, radiographic techniques, radiation therapy, radioisotopes, medical terminology, nursing procedures, administration and professional ethics. Subjects taken do not carry WVU credit, but provision to transfer course work under the Board of Regents bachelor of arts program may be pursued. Practical experience is gained on assigned tours of duty under the supervision of staff members.

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee. Students provide their own lodging and meals.

Students completing the program are awarded a certificate and are eligible to take the American Registry Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Training, Department of Radiology, West Virginia University Hospital, Morgantown, WV 26506.

## Coordinated Undergraduate Dietetics Program

The Coordinated Undergraduate Dietetics Program is sponsored jointly by the Department of Family Resources (College of Human Resources and Education) and University Hospital. The program offers diverse learning opportunities through academic courses in various divisions of the University and the Medical Center, and clinical experience in hospitals and community agencies.

After successful completion of the four-year program the student is awarded the degree of Bachelor of Science (B.S.) with a major in dietetics from the Department of Family Resources, College of Human Resources and Education. Clinical experience during the period of study enables the graduate to become a member of the American Dietetics Association without an additional internship period and eligible for the Registration Examination.

The student enters the program at the beginning of the junior year.

To qualify for application a candidate must have completed prescribed courses, with at least a 2.5 overall grade-point average—2.25 in science courses and 3.0 in nutrition and foods courses.

Final acceptance in the Coordinated Undergraduate Dietetics Program is subject to approval by the Admission Committee. An interview with the committee is required. *Enrollment is limited and priority will be given West Virginia residents.*

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student is assigned to a patient and must work under close supervision of a faculty member. The clinic program provides practical experience for the student and a much needed service to several thousand patients annually.

## University Health Service

The University Health Service provides primary medical care for WVU students, faculty, and staff. Each regularly enrolled student pays a fee which covers medical consultation and treatment at the Health Service on the ground floor of University Hospital, or in the Emergency Room when the Health Service is closed. It also covers limited payment for inpatient care at University Hospital. A voluntary insurance plan is available to students to cover the cost of inpatient and outpatient services beyond primary care. Students are strongly advised to obtain it. Details are available in a Health Service brochure.

## Library

The Medical Center Library, now part of the Medical Center Learning Resources Center, serves the students, faculty, and staff of the four schools and University Hospital. Its services are available to health professionals throughout West Virginia and to the general public when needed.

The library in the Basic Sciences Building contains approximately 130,000 bound volumes. More than 2,500 domestic and foreign periodicals are currently received.

The Medical Center Library and the central University Library maintain an active interlibrary loan service. Material not in either library may be borrowed from libraries in other cities.

The library is open, except on holidays, from 8:00 a.m. to midnight, Monday through Thursday; from 8:00 a.m. to 11:00 p.m., Friday; from 9:00 a.m. to 5:00 p.m., Saturday; and from 2:00 p.m. to 11:00 p.m., Sunday. Changes in scheduled hours are posted in advance.

## Admissions

### Admission to Medical Center Programs

Applicants for admission to any of the schools of the WVU Medical Center should write to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, who will furnish official blanks upon which formal application must be made.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

When requesting an application by letter for any of the Medical Center programs, the permanent home address must be given.

A \$10.00 application fee is required and must accompany the applications of all but Dental Hygiene students, who pay no application fee.

Any applicant who is refused admission, or who fails to enroll after acceptance, must re-apply in the regular manner if consideration for a subsequent year is desired.

Those applicants accepted for admission to any of the programs of the WVU Medical Center, except the Division of Dental Hygiene and out-of-state applicants to the School of Dentistry, are required to deposit \$50.00 before acceptance becomes official. Applicants accepted to the Division of Dental Hygiene deposit \$40.00, and out-of-state applicants accepted to the School of Dentistry deposit \$100. If the applicant enrolls in the program of the applicant's choice, the deposit is applied to first-semester tuition.

If an application for admission to the School of Medicine is withdrawn after the applicant has been offered a place and has submitted a deposit, such deposit may be refunded any time before March 30 of the year in which enrollment is anticipated, but will not be refunded after this date. Deposits submitted to all other programs are nonrefundable.

It is required that during the first semester of the first year all WVU Medical Center students must complete certain prescribed immunization and diagnostic procedures.

## Admission to WVU

Students may be considered for admission to WVU on the basis of graduation and transcripts from accredited high schools. High school graduates are required to present credit for 4 units of English and 1 unit of algebra. In addition, the health sciences require 1 unit of geometry.

(Special admissions regulations for individual Medical Center schools appear in subsequent pages of this *Catalog*.)

All students are required to take the American College Testing (ACT) Program tests and have the report of scores sent to WVU. This test is not used for admission, but for placement, and no other test may be substituted for it.

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools or from the College Scholarship Service, or the WVU Financial Aid Office. Submit only forms dated for the current academic year.

(*Your Guide to Financial Aid—West Virginia University* is available at the WVU Financial Aid offices, in the Mountainlair, Downtown Campus, and in 104 Basic Sciences Building, Medical Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.)

West Virginia high school students should obtain applications for admission from their high schools. Out-of-state students may write the WVU Office of Admissions and Records and request an application form. Applicants should prepare their part of the application and then return it to their school. The school then will send the completed application and transcript of the student's high school grades directly to the WVU Office of Admissions and Records.

Students should apply for admission when they have met these requirements—*West Virginia Residents*:

1. If, after 6 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above), the student should apply as soon as possible after September 15.



2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.0 of a possible 4.0 (C or above), the student should apply as soon as possible after beginning the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the high-school evaluation report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the General Educational Development (GED) examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

#### *Out-of-State Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 3.0 of a possible 4.0 (B or above), the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above), the student should apply as soon as possible after the beginning of the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the high-school evaluation report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the GED examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

## Admission of Transfer Students

Applicants for transfer from another college or university should submit the following to the Office of Admissions and Records:

1. A complete application for undergraduate admission.

2. An official transcript of all college work attempted to date. An official transcript covering subjects subsequently taken should be sent as soon as possible.

3. Catalog pages describing all subjects which have or will have been completed. The applicant's name should be written on each page and each subject indicated by a check mark in the margin. Complete catalogs should not be sent. (*Not necessary from West Virginia colleges.*)

The cumulative average of all work attempted before transfer must be at least C.

Credits and grades earned for all baccalaureate-level courses at any baccalaureate degree-granting institution in the West Virginia state system of higher education and up to 72 hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia state system shall be transferable toward a bachelor's degree. (See also "Requirements As to Residence," page 21.)

Credits (though not grades) are transferable from institutions outside the West Virginia state system for courses carrying a grade of C or higher. A grade of D on the first of sequence courses may be transferred if the second course grade is C or higher.

Credits from two-year community colleges and junior colleges outside the West Virginia state system are limited to 72 hours of lower-division courses. These colleges must be accredited by the North Central Association of Colleges and Schools or another regional accrediting association.

The transfer of credits does not exempt the student from satisfying all the requirements for the student's degree program at WVU.

All transcripts must be in the Office of Admissions and Records three weeks in advance of registration.

Evaluation of transcripts for transfer of credit is furnished only after receipt of complete official transcripts and application for admission.

Transfer students generally are admitted only after they complete one full year at another institution. Applicants who have less than one full year of college work elsewhere must submit both their college and high school records. Students who have successfully completed 6 hours or less at another accredited institution will apply as freshmen.

#### **Intrauniversity Transfers**

Students transferring from Potomac State College of WVU shall be considered intrauniversity transfers. All records made at Potomac State College are part of the student's WVU record, but no more than 72 hours may be applied toward the baccalaureate degree.

If a change of major is involved, the transferee should consult the college, school, or department to which the student is transferring concerning requirements for the new major.

### **Admission of Special Students**

Persons not desiring to become candidates for a degree may, by special permission, be admitted as special students. Such students are subject in all respects to the usual rules relating to registration and scholarship. Admission to any class is subject to the approval of the instructor in charge.

Students who do not plan to follow a degree program at WVU should submit only a statement of good standing from the last college attended.

### **Admission of Post-Baccalaureate Students**

Students having one or more earned degrees from an approved college or university and desiring to enroll for undergraduate credit may be admitted as post-baccalaureate students. Students admitted in this category would not be working toward a graduate degree and credit earned while under this classification would be limited to undergraduate credit. Students admitted as post-baccalaureate, since they are limited to undergraduate credit, would be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an official transcript from the institution granting their latest degree.

### **Admission of Foreign Students**

This school is authorized under Federal law to enroll nonimmigrant alien students.

Foreign students wishing to enroll at WVU must comply with the academic requirements stated above and in addition to other academic and nonacademic requirements, as follows.

#### **Early Inquiry and Application**

Foreign applicants should forward a letter of inquiry one year before they intend to begin study in the United States. Foreign students who have been granted admission are expected on campus at the beginning of July for a six-week period of orientation and an intensive study of English. The University receives a large number of

applications from international students. For this reason, and because of the time required for the student to make visa and financial arrangements, April 1 has been established as a deadline after which applications cannot be processed.

Arrangements for the students' financial obligations to WVU and for their entire stay in the United States should be made before leaving their countries.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## English Proficiency

All foreign applicants whose native language is not English must submit Test of English As a Foreign Language (TOEFL) scores. A minimum of 550 is required for admission. TOEFL information and registration forms are available from the Educational Testing Service, Princeton, NJ 08540 USA. Tests are normally given six times each year. It requires one month to score and report individual test results. Registration for the TOEFL examination closes five weeks before the testing date.

## Credentials

Complete and original official records of all studies undertaken by an applicant at any institution attended (secondary school, college, university, technical school, professional school, etc.), must be provided at time of application for admission to WVU. Copies of original records are acceptable, provided they are officially stamped.

Such records should include: (1) complete dates of attendance; (2) identification of individual subjects; (3) total number of hours in each class per week; (4) total number of weeks each class meets in session; (5) final grade in each subject, for each year; (6) actual credits earned for each subject; (7) class, division, or rank achieved; (8) identification of the individual; (9) explanation of each institution's grading system; and (10) certification, and date, of degree or awards achieved. If any of this information cannot be supplied, an official explanatory statement from the school should be submitted. *(All documents must be accompanied by certified English translations.)*

All documents should be forwarded directly from the registrar or other authorized official of the school to the WVU Office of Admissions and Records.

If an applicant is currently enrolled in a school, tentative admission may be granted on the basis of an incomplete record which indicates the applicant will unquestionably meet the admission standards of WVU. Final admission, however, cannot be approved until the complete record has been received and evaluated.

## Foreign Students Transferring Within the United States

Foreign students applying to transfer from schools within the United States will not be admitted and permitted to register at WVU unless they have complied with all transfer procedures as required by the United States Immigration and Naturalization Service (INS).

The school the student was last authorized to attend must have completed and signed the INS form I-538. This, together with a valid I-20 form received from WVU and the I-94 form, must have been submitted to the INS office having jurisdiction over the school the student was last authorized to attend. If the student is not now attending that school, a letter must be added explaining in detail why.



If the INS approves the transfer, this approval will be stamped on the student's I-94. The student must then immediately notify WVU that the transfer has been approved.

Only when these procedures have been completed will WVU undertake to admit and register the student. No student should move to Morgantown without having received this assurance of admission to WVU.

## Admission of Veterans

Veterans may be admitted to WVU with less than the minimum admission requirements necessary for other, nonveteran applicants.

Information regarding educational opportunities made possible at the University through provisions of the Veterans Readjustment Benefits Act of 1966—G.I. Bill (Public Law 358), the Vocational Rehabilitation Program of the Veterans Administration (Public Law 16), and the War Orphan's Educational Assistance Act of 1956 (Public Law 634) may be obtained from the Veterans Counselor by personal conference at his office in Mountainlair or by mail. An amendment to Public Law 634, enacted in 1964, provides benefits to many dependents of 100 percent disabled veterans.

Veterans having at least one continuous year of military service may be exempted from the physical education general program. No scholastic credit is given. Proof of military service should be presented to the Dean of Admissions and Records.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## Readmission

Undergraduate students who leave the University for at least one complete semester are required to submit an application for readmission to the Dean of Admissions and Records.

Students who have been suspended from the University must have written approval from the dean of the school or college from which the student was suspended.

Approval in writing must be secured in advance to elect courses offered elsewhere. A cumulative average of C is required in order to obtain such approval. Credit will be accepted for transfer for courses carrying a grade of C or higher when the conditions indicated above have been met.

Students wishing to change their major upon readmission must have permission from their previous dean and the dean of the college to which they wish to transfer.

## Fees and Expenses

All West Virginia University fees are subject to change without notice.

All fees are due and payable to the Controller on the days of registration. Medical Center students pay their fees at the Controller's Office, Basic Sciences Building. Students must pay fees before registration is accepted. Completion of arrangements with the Controller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair. Medical Center students pay at the Controller's Office, Basic Sciences Building.

# Health Science Programs At West Virginia University

<i>Major or Degree Program</i>	<i>Bachelor</i>	<i>Master</i>	<i>Doctorate</i>
<b>School of Dentistry</b>			
Dental Hygiene .....	B.S.		
Dentistry .....			D.D.S.
Endodontics .....		M.S.	
Orthodontics .....		M.S.	
<b>School of Medicine</b>			
Anatomy .....		M.S.	Ph.D.
Biochemistry (Medical) .....		M.S.	Ph.D.
Medical Technology .....	B.S.	M.S.	
Medicine .....			M.D.
Microbiology (Medical) .....		M.S.	Ph.D.
Pharmacology and Toxicology .....		M.S.	Ph.D.
Physical Therapy .....	B.S.		
Physiology (Medical) .....		M.S.	Ph.D.
Biomedical Sciences .....			Ph.D.*
<b>School of Nursing</b>			
Nursing .....	B.S.N.	M.S.N.	
<b>School of Pharmacy</b>			
Pharmaceutical Sciences .....		M.S.	Ph.D.
Pharmacy .....	B.S.Pharm.		
<b>University Hospital</b>			
<b>Medical Graduate Residencies</b>			
Radiologic Technology .....	Certificate		

Awarded under the auspices of the degree-granting authority of WVU, but in cooperation with the Basic Sciences Departments of Marshall University School of Medicine.

All students are expected to register on days set apart for registration at the beginning of each semester or session of the University.

No student will be permitted to register at the University after the twelfth day of a semester or the fourth calendar day of a summer session. Days are counted from the first day of registration.

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$10.00.

Students registering pay the fees shown in the fees chart, plus special fees and deposits as required.

No degree will be conferred upon any candidate and no transcripts will be issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

Persons not registered as University students and who are not members of its administrative or teaching staffs shall not be admitted to regular attendance in University classes.

## ESTIMATED EXPENSES FOR MEDICAL CENTER PROGRAMS (First Semester) [Subject to Change]

Tuition and registration are the same for both semesters. Some expenses, such as fees, instruments, and book costs will be different for the Second Semester.

School or Division	Tuition and Registration Fees				Instruments	Lab Coats, Uniforms, etc.	Books	Total	
	Resident	Nonresident	Fees*	Resident				Nonresident	
<b>Dental Hygiene</b> Freshman Sophomore Junior Senior	\$225.00	\$601.00	\$25.00	\$850.00	\$20.00	\$120.00	\$446.00	\$821.00	
	225.00	601.00	5.00	120.00	165.00	135.00	1,401.00	1,776.00	
	225.00	601.00	5.00	60.00	66.00	120.00	537.00	912.00	
	225.00	601.00	5.00	60.00	66.00	30.00	387.00	762.00	
<b>Dentistry</b> First Year Second Year Third Year Fourth Year	288.00	706.00	38.00	1,700.00	88.00	348.00	2,462.00	2,880.00	
	288.00	706.00	38.00	500.00	110.00	95.00	1,031.00	1,449.00	
	288.00	706.00	14.00			120.00	422.00	840.00	
	288.00	706.00	20.00				308.00	726.00	
<b>Medical Technology</b> Junior Summer Senior	226.00	601.00	35.00		60.00	220.00	541.00	916.00	
	226.00	364.00			25.00	321.00	549.00	831.00	
	226.00	601.00			130.00	100.00	456.00		
<b>Medicine</b> First Year Second Year Third Year Fourth Year	288.00	706.00	45.00	180.00	72.00	600.00	1,185.00	1,603.00	
	288.00	706.00	55.00	540.00	72.00	480.00	1,435.00	1,853.00	
	288.00	706.00			48.00	480.00	816.00	1,234.00	
	288.00	706.00			48.00	300.00	636.00	1,054.00	
<b>Nursing</b> Sophomore Summer Junior Senior	226.00	601.00	5.00		116.00	150.00	497.00	872.00	
	132.00	474.00	5.00			50.00	187.00	529.00	
	226.00	601.00	5.00			20.00	251.00	626.00	
	226.00	601.00	5.00			80.00	311.00	686.00	
	226.00	601.00							
<b>Pharmacy</b> Third Year Fourth Year Summer Fourth Year	261.00	781.00		35.00	25.00	200.00	541.00	1,061.00	
	261.00	781.00			25.00	100.00	386.00	906.00	
	261.00	781.00					261.00	781.00	
	261.00	781.00			25.00	120.00	406.00	926.00	
<b>Physical Therapy</b> Junior Senior Summer	226.00	601.00	5.00	15.00	60.00	250.00	556.00	931.00	
	226.00	601.00			60.00	160.00	451.00	826.00	
	48.00	219.00	10.00				58.00	229.00	

\*Fees—includes lab fees, microscope rental, or graduation fee

TUITION & REGISTRATION FEES BREAKDOWN			Tuition	Registration	Higher Education Resources	Institutional Activity	Mountainair Construction	TOTAL
Dent Hy. Med Tech	RESIDENT	Full-time 9 hr or more	\$ 55.00	\$ 50.00		\$101.00	\$ 20.00	\$226.00
Nursing & Phys Ther	NON-RESIDENT		230.00	250.00		101.00	20.00	601.00
Pharmacy & Graduate	RESIDENT	Full-time 9 hr or more	55.00	50.00	\$36.00	101.00	20.00	261.00
	NON-RESIDENT		230.00	250.00	180.00	101.00	20.00	761.00
Dentistry & Medicine	RESIDENT	Full-time 9 hr or more	117.00	50.00		101.00	20.00	288.00
	NON-RESIDENT		335.00	250.00		101.00	20.00	706.00

TUITION PER SEMESTER HOUR—PART-TIME &amp; SUMMER (Under 9 hr.)

Dental Hygiene, Medical Technology, Nursing &amp; Physical Therapy

Pharmacy &amp; Graduate

	—Per Credit Hour—	\$ 73 00
\$•16 00		

	—Per Credit Hour—	\$ 73 00
\$•16 00		

plus Special Fees



Special Fees

Application for Admission (College of Law and Graduate School) .....	\$15.00
Certificate of Advanced Study in Education .....	2.00
Diploma Replacement .....	5.00
Examination for Advanced Standing .....	3.00
Examination for Entrance Credit, per unit .....	1.00
Examination of Candidate for Graduate Degree .....	1.00
(For graduate students not otherwise enrolled at time of final examination.)	
General Educational Development Tests (high school level) .....	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduation .....	10.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Graduate Program Continuance Fee .....	35.00
Late Registration (nonrefundable) .....	10.00
(Not charged to students who complete registration during the regular registration days set forth in the University Calendar.)	
Reinstatement of Student Dropped from the Rolls .....	3.00
Student Identification Card Replacement .....	1.00
Student's Record Fee .....	2.00
(One transcript of a student's record is furnished by the Dean of Admissions and Records without charge. This fee is charged for furnishing an additional transcript.)	

Summer Fees

Tuition, per semester hour	Resident	Nonresident
Undergraduate students .....	\$11.00	\$54.00
Professional and Graduate students .....	16.00	73.00
Dentistry and Medicine students .....	22.00	82.00
Daily Athenaeum Fee* .....	.90	.90
Radio Station Fee* .....	.90	.90
Health, Counseling and Program Services Fee .....	13.50	13.50
Mountainlair Construction Fee per 6-week summer session or any portion thereof* .....	7.50	7.50
Student Educational Services Fee .....	5.70	5.70
Transportation Fee .....	9.50	9.50

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)

Classification of Students (Full-Time and Part-Time)

A *full-time professional or graduate student* is one who is registered for 9 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during the summer.

A *full-time undergraduate student* is one who is registered for 12 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during a 6-week summer session.

For fee assessment purposes, a *part-time professional or graduate student* is one who is registered for fewer than 9 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

A *part-time undergraduate student* is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

It should be recognized that unique curriculum requirements in several of the Medical Center programs may require student involvement in summer clinical clerkships prior to official enrollment for the following semester's work.

## Fees for Off-Campus Courses

Fees for credit hours for off-campus students are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee, the Radio Station Fee, or the Mountainlair Construction Fee. However, all students must pay a \$20.00 course fee for each off-campus course taken.

## Laboratory Fees

Consult specific department sections of this *Catalog* concerning nonrefundable deposits and microscope rental fee.

## Service Charge on Returned Checks

A service charge of 5 percent of the amount of each check returned unpaid by the bank upon which it is drawn shall be collected unless the student can obtain an admission of error from the bank.

If the check returned by the bank was in payment of University and registration fees, the Controller's Office shall declare the fees unpaid and registration cancelled if the check has not been redeemed within three days from date of written notice. In such a case the student may be reinstated upon redemption of the check, payment of the 5 percent service charge, Reinstatement Fee of \$3.00, and Late Payment Fee of \$10.00.

## Refund of Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Comptroller evidence of eligibility for a refund.

To withdraw officially, a student must apply to Student Educational Services for permission. Semester fees will be returned in accordance with the following schedule:

First refund period ending on the twelfth day following the beginning of general registration.	} All activity fees chargeable to Special Services and all other semester fees less \$2.50. (Under no circumstances is the amount retained less than \$2.50.)
Second refund period ending on the fifth Friday following the beginning of general registration.	
Last refund period ending on the eighth Friday following the beginning of general registration.	} 40% of all refundable fees.

The second Friday following the beginning of general registration for a summer session is the end of the refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit, if the call comes before the end of the first three-fourths of the semester, and that the full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however, that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

## Identification Card

An identification card is issued to each full-time student upon paying full fees. It entitles the owner admission to certain University athletic events, various activities of student government, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

## Residential Status for Admission and Fee Purposes

The West Virginia Board of Regents has adopted regulations governing the classification of students as residents or nonresidents for admission and fee purposes at all institutions under its jurisdiction.

*General*—Students enrolling in WVU shall be classified as resident or nonresident for admission, tuition, and fee purposes by the Dean of Admissions and Records. The decision shall be based upon information furnished by the student and all other relevant information. The Dean of Admissions and Records is authorized to require such written documents, affidavits, verifications, or other evidence as are deemed necessary to establish the domicile of a student. The burden of establishing residency for tuition and fee purposes is upon the student.

If there is a question as to residence, the matter must be brought to the attention of the Dean of Admissions and Records and passed upon at least two weeks before registration and payment of tuition and fees. Any student found to have made a false or misleading statement concerning the student's residence shall be subject to disciplinary action and will be charged the nonresident fees for each session theretofore attended.

*Residence Determined by Domicile*—Domicile within the state means adoption of the state as a fixed permanent home and involves personal presence within the state with no intent on the part of the person to return to another state or country. West Virginia domicile may be established upon the completion of at least twelve months of continued residence within the state before the date of registration, provided that such twelve months of residency is not primarily for the purpose of attendance at any institution of learning in West Virginia.

Establishment of West Virginia domicile with less than twelve months residence before the date of registration must be supported by proof of positive and unequivocal action, such as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other



acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established.

*Minors*—Minors are defined by the West Virginia Code (2-2-10) as persons under 18 years of age. The residence of a minor shall follow that of the parents at all times, except in extremely rare cases where emancipation can be proved beyond question. The residence of the father, or the residence of the mother if the father is deceased, is the residence of the unmarried or unemancipated minor. If the father and the mother have separate places of residence, the minor takes the residence of the parent with whom the minor lives or to whom the minor has been assigned by court order. The parents of a minor will be considered residents of West Virginia if their domicile is within the state.

A minor student who is properly admitted to an institution as a resident student shall retain that classification as long as the student enrolls each successive semester.

*Emancipated Minor*—An emancipated minor may be considered as an adult in determining residence, provided satisfactory evidence is presented that neither of the parents, if living, contribute to the minor's support nor claim the minor as a dependent for federal or state income tax purposes.

In the event that the fact of emancipation is established, the emancipated minor assumes all of the responsibilities of an adult to establish residence for tuition and fee purposes. Proof must be provided that emancipation was not achieved principally for the purpose of establishing residence for attendance at an institution of higher education.

*Students 18 Years of Age or Over*—A student 18 years of age or over may be classified as a resident if: (1) the parents were domiciled in the state at the time the student reached majority and such student has not acquired a domicile in another state, or (2) while an adult the student has established a bona fide domicile in West Virginia. Bona fide domicile in West Virginia means that the student must not be in the state primarily to attend an educational institution and the student must be in the state for purposes other than to attempt to qualify for resident status.

Any nonresident student who reaches the age of 18 years while a student at any educational institution in West Virginia does not by virtue of such fact alone attain residence in this state for admission or tuition and fee payment purposes.

A student who is properly classified as a resident at the time of attaining the age of 18 shall continue to be classified as a resident as long as the student enrolls each successive semester and does not establish a domicile, or legal residence, in another state.

*Change of Residence*—An adult student who has been classified as an out-of-state resident and who seeks resident status in West Virginia must assume the burden of proving conclusively that the student has established domicile in West Virginia with the intention of making the student's permanent home in this state. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements but also by a person's actions. The Dean of Admissions and Records in making his determination shall consider such actions as, but not limited to, the purchase of a West Virginia home, full-time employment within the state, paying West Virginia property tax, filing West Virginia income tax returns, registering to vote in West Virginia and the actual exercise of such right, registering of motor vehicles in West Virginia, and possessing a valid West Virginia driver's license. Additional items of lesser importance include transferring or establishing local church membership, involvement in local community activities, affiliation with local social, civic, fraternal, or service organizations, and various other acts which may give evidence of intent to remain indefinitely within the state. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been

established. Factors militating against a change in residence classification may include such considerations as the fact that the student is not self-supporting, that the student is carried as a dependent on the parents' federal or state income tax returns or the parents' health insurance policy, and that the student customarily does not remain in the state when school is not in session.

*Marriage*—The residence of a married person is determined by the same rules of domicile which would apply if he or she were not married.

*Military*—An individual who is on active military service or an employee of the federal government may be classified as a resident for the purpose of payment of tuition and fees provided the individual established a domicile in West Virginia before entrance into federal service, that the individual entered the federal service from West Virginia, and that the individual has at no time while in federal service claimed, or established, a domicile in another state. Sworn statements attesting to these conditions may be required. The wife and dependent children of such individuals also shall be classified as residents of the state of West Virginia for tuition and fee purposes. Persons assigned to full-time active military service and residing in West Virginia may be classified as in-state residents for tuition and fees purposes after twelve months of continuous location in the state.

*Aliens*—An alien in the United States on a resident visa, or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia, may be eligible for resident classification, provided the alien is in the state for purposes other than to attempt to qualify for residency status as a student.

*Appeal Process*—The decisions of the Dean of Admissions and Records may be appealed to the President of WVU. The President may establish such committees and procedures as he determines necessary for the processing of appeals. The decision of the President may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board of Regents.

## Regulations Affecting Degrees

Candidates for degrees are eligible for graduation when they complete the requirements in the college or school in which they are registered which were in effect at the time of their first registration in that college or school, provided they graduate within a period of seven years from the time of their first registration. Students who do not complete the requirements for graduation within seven years from their first registration must meet *all the conditions* of a later *Catalog* — one that will be no more than seven years old by the time they graduate.

If there are major changes in the *Undergraduate Catalog* during the student's course of study, the student does not have to abide by them unless they are promulgated by the Board of Regents, or by local, state, or federal law. However, by choice and with the approval of the adviser and the Dean, a student may meet *all the conditions* of a later *Undergraduate Catalog* than that under which the student first registered in that college or school.

University policy provides that in view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of WVU the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

All degrees are conferred by the Board of Regents upon recommendation of the faculties of the various colleges and schools. Degrees are granted at the close of the semester or summer session in which the students complete their work.

# Baccalaureate Degrees

## Credits Required

In addition to the University requirements listed in this *Catalog*, each baccalaureate degree is conditional upon the completion of a specified number of semester hours of credit, as determined by the student's degree program requirements. Therefore, students must familiarize themselves with their school and degree program requirements, as given in subsequent pages of this *Catalog*.

## Physical Education

Two hours of physical education, to be taken during the first year in residence, are required for graduation, except in the case of students entering with advanced standing amounting to 58 semester hours or more. (See "General Program" in the School of Physical Education section of the *Undergraduate Catalog*.) The University Health Service will determine whether students are physically qualified for required physical education courses and for active participation in other University activities.

## University Core Curriculum

I. Two semesters of English Composition and Rhetoric (English 1 and 2) are required of all candidates for the bachelor's degree in all colleges and schools of the University, unless part or all of the requirement for certain students of superior achievement is waived under regulations prevailing at the time of admission. Such students will be informed of their eligibility by the Coordinator of Writing Programs in English.

II. Remedial work in mathematics to cover the deficiency if the student, upon entering the University, lacks proficiency in mathematics equal to that normally attained in two years of high school mathematics.

III. Twelve credit hours\* of work in selected approved courses in each of the three following areas, including courses in at least two subjects in each group:

### Group A

1. Art
2. English  
(exclusive of Engl. 1 and 2)
3. Humanities
4. Languages
5. Music
6. Philosophy
7. Religious Studies
8. Selected Multidisciplinary  
Studies
9. Speech Communication
10. Theatre

### Group B

1. Economics
2. Forestry 140
3. Geography
4. History
5. Minerals 97
6. Political Science
7. Psychology
8. Selected Multidisciplinary  
Studies
9. Social Science
10. Sociology and Anthropology

\*Two 4-credit courses and one 3-credit course may be substituted in lieu of 12 credit hours.



### *Group C*

- |                     |   |
|---------------------|---|
| 1. Bacteriology     | 9. Mathematics                            |
| 2. Biology          | 10. Nutrition                             |
| 3. Chemistry        | 11. Physical Science                      |
| 4. Computer Science | 12. Physics and Astronomy                 |
| 5. Entomology       | 13. Physiology                            |
| 6. Engineering 111  | 14. Selected Multidisciplinary<br>Studies |
| 7. Genetics         | 15. Statistics                            |
| 8. Geology          |   |

The determination as to whether ROTC courses will be counted toward fulfillment of the Core Curriculum or will be counted as free electives is the prerogative of the department chairperson or dean of the appropriate college or school. This is in keeping with the Board of Regents' orders, effective at the end of the first semester of the 1967-68 academic year, which stipulated that "each academic division of the University must allow at least 8 hours of credit toward graduation for courses in Military Science (ROTC) or Air Force Aerospace Studies (ROTC), if earned during the first two years of enrollment ... A student electing to take Military Science (ROTC) or Air Force Aerospace Studies (ROTC) should consult the student's department chairperson or dean of the student's college or school for determination as to how the 8 hours of academic credit will be credited toward fulfilling graduation requirements."

### **Branch, Community, and Junior Colleges**

Seventy-two hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges may not exceed 72 hours. Transfer credit from community colleges and junior colleges is normally limited to lower-division courses.

### **Requirements As to Residence**

A student who comes to WVU from another college or university should transfer not later than the beginning of the third year. In no case will a student who matriculates in WVU later than October 1 in any year be permitted to receive a degree at the next commencement.

In special cases, students who desire to leave WVU at the close of their third year to enter another institution for the purpose of taking a combined course leading to two degrees or of preparing for graduate study, upon application beforehand to the Committee on Academic Standards of the college or school in which they are registered, may be permitted to do the work of the fourth year, or a part thereof, at such other institution and to receive the bachelor's degree from WVU upon presentation of the proper credits.

The transfer student whose undergraduate work has been altogether in institutions within the West Virginia state system of higher education must complete either the last 30 hours of work, or a minimum of 36 hours including 16 of the last 32 hours in residence. Other transfer students must complete either a total of at least 90 hours or the last 30 hours in residence at WVU. The transfer student may be required to earn up to 15 hours in the major field in residence regardless of the number of hours and the nature of the courses transferred.

## Work Done Out of Residence

It is WVU policy to discourage the taking of regular residence courses in absentia. In the case of courses begun at WVU and not completed because of illness or for other acceptable reasons, however, permission to complete the work in absentia under the direction of regular WVU instructors may be granted by the Committee on Academic Standards of the college or school concerned; but in such case credit should be given only upon a report of a grade of no less than C on final examination. This regulation does not apply to WVU off-campus courses.

After a student enrolls on the Morgantown campus, the student must obtain advance approval in writing from the student's adviser and dean and the Dean of Admissions and Records to obtain credit toward a degree for courses offered at other institutions and undergraduate branches of WVU. An overall average of C is required on all work completed at WVU in order to obtain such approval. Transfer credit from schools not affiliated with WVU will be accepted for courses carrying a grade of C or higher when conditions indicated above have been met.

## Substitution for Required Courses

A student who desires to substitute another course for any prescribed in the student's curriculum or required for the degree toward which the student is working must obtain permission for such substitution from the Committee on Academic Standards in the student's college or school.

## Advanced Placement Credit

West Virginia University encourages students to work to their full capacity and to advance as rapidly as appropriate in their academic work. A number of opportunities are open to both qualified high school juniors and seniors, as well as to adults returning to school after an interval of work or military experience, to demonstrate competence beyond that normally associated with graduation from high school.

High school students who take college-level subjects offered in their schools in cooperation with the College Entrance Examination Board (CEEB) Advanced Placement Program should take the appropriate three-hour examinations administered by the Advanced Placement Service and have the scores sent to WVU. Credit for corresponding WVU courses will be given for high achievement on these tests.

Applicants for admission to the University, especially those who have gained a significant level of maturity through their life experiences, may gain college credit for their educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. Policy of the West Virginia Board of Regents allows University credit to be awarded for successful completion of any or all of the CLEP Subject Examinations, as well as allowing up to 34 hours of general education credit for successful performance on the CLEP General Examinations. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek advanced standing via the CLEP program. Interested applicants may write the Dean of Admissions and Records for further information regarding the CLEP program and WVU credit.

Advanced placement also may be granted for specific military experience. Returning veterans should consult the Dean of Admissions and Records and the WVU Veterans Counselor for details.

After admission to WVU, students may elect to take examinations demonstrating their competence in particular course work. Credit or advanced placement is given for satisfactory completion of the tests. Students interested in challenging courses by examination should consult their advisers for procedures and details.

## Credit by Examination

Students actively enrolled in WVU may receive credit for courses demonstrating competency in the content covered by a particular course. The department responsible for administering the course will determine the evaluation tools. Where skill and cognitive abilities are components of the course, both will be evaluated. Credit will be given if a satisfactory degree of competency is demonstrated.

A college, school, or department may require students desiring such credit to prepare a self-evaluation statement determining the degree of competency they possess and the methods by which it was achieved.

Students interested in receiving credit for a course by examination should consult the college or school in which the course is offered for procedures and details.

## Credit for Correspondence Work

Credit up to a maximum of 30 semester hours for work completed by correspondence in nonlaboratory courses will be accepted by WVU when such work is given by accredited colleges or universities that accept work for credit toward their own degrees and whose residence work is accepted by WVU.

## Second Bachelor's Degree

A student who has received one baccalaureate degree and wishes to receive a second baccalaureate degree must satisfactorily complete enough additional credits earned at WVU or elsewhere, is at least 30 semester hours more than the number required for the first baccalaureate degree; all requirements, departmental and otherwise, of the second baccalaureate degree program must be satisfied. In no case will a second baccalaureate degree be awarded to a student who has met the University residence requirement (see "Requirements As to Residence").

A student who wishes to receive simultaneously two baccalaureate degrees must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. Students desiring to receive simultaneous baccalaureate degrees must be admitted to both programs and provide the Office of Admissions and Records of the college or school approvals in writing.

*(Effective Date: Students graduating after August 31, 1979.)*

## Visitors

Full-time University students may attend classes as visitors, provided they obtain the written permission of their advisers and of the instructors in classes they desire to visit. Members of the administrative or teaching staffs, or other regular employees of the University, may attend classes as visitors provided they obtain written permission of the chairperson of their departments and of the instructors in the classes which they desire to visit.

No credit is given for work in such classes. Such persons may not obtain credit by advanced standing examinations in courses attended as visitors.

## Auditors

Students may enroll in courses without working for grade or for credit by registering as auditors and by paying full fees. Change in status from audit to credit or from credit to audit may be made during the registration period. Attendance requirements for auditors shall be determined by the instructor of the course being audited. It is the prerogative of the instructor to strike the name of any auditor from grade report forms and to instruct the Office of Admissions and Records to withdraw the auditor from the class, if attendance requirements are not met.



## Summer Sessions

There are two summer sessions, each of six weeks duration. The first session begins approximately the middle of May and ends June 30. The second session begins July 1, and ends the second week of August. Requirements for admission and character of the work offered are the same for the summer sessions as for the regular academic year.

Credit may be obtained toward the bachelor's, master's, and doctorate. Offerings are varied from summer to summer so that students may complete work for the master's degree by attending summer sessions only.

For complete information, see the *WVU Summer Session Bulletin*.

## Grade-Point Average

All academic units of the University require minimum standards of scholastic quality. Grade points are computed only on grades earned at WVU and at other institutions in the West Virginia state system of higher education. To be eligible for graduation, a student must have a grade-point average of 2.0 (C) or higher on all work for which the student receives grades (except W, WU, and P). In addition, specific degree programs may require minimum grades of C, or in some cases higher than C, in specific courses or portions of the baccalaureate program.

It is the student's responsibility to keep informed of the student's grade-point standing. This information may be obtained at any time from the dean of the college or school in which the student is registered.

## Graduation with Honors

The University recognizes distinguished academic achievement by awarding initial baccalaureate degrees *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude*, to qualified students. The following regulations govern these awards:

1. Grade-point averages for graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be computed by starting with the student's penultimate semester or summer session and continuing in reverse chronological order until at least 80 semester hours, excluding credits earned with a grade of P or S, have been counted. If, in order to total the required number of hours it is necessary to include any part of a semester or summer session, the work of the whole semester or session shall be included.

2. Students who transfer to WVU may be eligible for graduation with honors based on the computational system stated above.

3. Subject to the above conditions, all candidates for a baccalaureate degree whose grade-point average is 3.80, or higher, shall be graduated *Summa Cum Laude*. Those whose average is lower than 3.8, but equal to or higher than 3.60, shall be graduated *Magna Cum Laude*. Those whose average is lower than 3.60, but equal to or higher than 3.40, shall be graduated *Cum Laude*.

4. Fitting recognition of graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be made on the candidate's diploma and in the Commencement Program.

(This policy will be effective for all students whose first enrollment in an institution of higher education is on or after May 15, 1979.)

# Examinations and Reports

## Courses

As a rule courses extend through one semester only, although some are of a year's duration. No credit will be given for less than an entire course except by special order of the Committee on Academic Standards. Grades given at the end of the first semester in courses extending throughout the year are merely indicative of the quality of work done by the student to that point and do not give credit for the part of the course so far completed. Such first-semester grades may be considered in determining the final grade, however.

Summer courses carry the same credit value as courses offered in regular semesters.

## Evaluation of Student Progress

Measurement and evaluation of learning, consistent with the objectives of the course, provide opportunity for the student and the teacher to evaluate progress through a variety of methods. Evaluation by final examination alone is discouraged.

Students are responsible for all material presented or assigned in scheduled instructional sections. Failure to complete all assigned work may result in a report of I or a grade of F at the discretion of the instructor.

Final examinations are held during the last two days of each summer semester of the academic year and during the last two days of each session. A listing in the *Schedule of Courses* each semester sets the time for final examinations.

The only tests permitted during the week of classes preceding finals will be in evening classes, practical laboratory tests, make-up examinations, and regularly scheduled short quizzes.

## Absence from Examinations

The student is required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor shall count the examination as zero and report the final grade as F. If, in the opinion of the instructor, absence of the student was for satisfactory reason, the grade of I may be reported.

A student who has been absent because of illness, authorized University activities, or other reasons approved by the student's dean, has the opportunity to make up regularly scheduled examinations.

## Grade Reports

In the seventh week of classes of each semester, instructors in all undergraduate courses shall submit a report of students doing unsatisfactory work; that is, earning grades of D or F. These grades are used for counseling and are not recorded on the student's permanent record in the Office of Admissions and Records. These reports are sent to the Dean of Admission and Records or a representative and this information is transmitted to the student, parent or guardian, adviser, and dean of the college or school.

Final grades are reported by instructors directly to the Office of Admissions and Records within 48 hours after the closing of the examination.

The final standing of all seniors provisionally approved for graduation at the close of the second semester shall be reported by their instructors to the deans of their colleges and schools, and the final standing of all graduate students provisionally

approved for graduation shall be reported to the Dean of the Graduate School. Special report cards are supplied by the Dean of Admissions and Records.

A report of each student's work is made at the close of the semester or summer session to the student or to the student's parents or guardian.

## Grading, Absences, Academic Standing, Suspension, and Withdrawals

### Grading System

- A — excellent (given only to students of superior ability and attainment)
- B — good (given only to students who are well above average, but not in the highest group)
- C — fair (average students)
- D — poor but passing
- F — failure
- I — incomplete
- W — withdrawal before the end of the fifth week of a semester or withdrawal doing satisfactory work thereafter
- WU — withdrawal doing unsatisfactory work (after the fifth week of a semester)
- P — pass (see Pass-Fail Grading below)
- X — auditor, no grade and no credit
- CR — credit but no grade
- PR — progress. Final grade at end of the second semester (Medical Center)
- S — Satisfactory
- U — Unsatisfactory (equivalent to F) } in certain approved graduate courses

### Pass-Fail Grading

The basic purpose of pass-fail grading for undergraduates at WVU is to promote the undertaking of elective courses unrelated to the student's fields of degree concentration. A secondary purpose of pass-fail grading is to facilitate student grading in performance or competency based courses which may be an integral part of the student's program.

*Student Option.* Any full-time student who has completed 15 hours and maintains a 2.0 grade-point average may elect to take a maximum of 4 hours each semester or each summer session in which the grade earned will be either P (pass) or F (fail). The courses taken for pass-fail grading must be free electives and shall not exceed a total of 18 hours of credit. Unless otherwise indicated, excluded are courses in the student's major, courses in other subjects that are required by the major, and courses taken to satisfy either University, college, or school requirements. For example, courses elected to satisfy the physical education, English, Core, or foreign language requirements may not be taken for pass-fail grading.

The student electing the pass-fail grading option will be graded as a regular student and the appropriate letter grade submitted to the Office of Admissions and Records. The Office of Admissions and Records shall convert the earned letter grade to P-F on the basis of A, B, C, or D for a pass, and F for a fail.

The selection of a course for pass-fail grading must be made at registration and may not be changed after the close of the registration period.



*College or School Option.* A department or unit may designate any performance or competency based course which, with approval of the college or school and the University Senate, may be offered exclusively as P-F. Such courses offered only as P-F shall not be included in the maximum of 18 hours that may be freely elected under the student option.

(This revised policy became effective as of the beginning of the First Semester, 1977-78, for grading under the *Student Option*.)

### Grade Points

Grade points are based on the following grade-point values for each semester of credit:

A	B	C	D	F	I	U
4	3	2	1	0	0	0

The grade-point average is computed on all work for which the student has registered with the following exceptions:

(a) Courses with W, WU, P, S, and X.

(b) If an undergraduate student earns a grade of D or F in any course at WVU taken no later than the semester or summer session registration when a cumulative total of 58 hours has been attempted, and if this course is repeated in residence at WVU, one time only, the lower grade shall be disregarded for the purpose of determining the student's grade-point average, hours passed and hours attempted, and the higher grade earned for this course shall be used in determining the student's grade-point average, hours passed and hours attempted. The first grade recorded shall not be deleted from the student's record and the second grade will be entered marked repeat, in the semester when taken. The repeat shall be completed no later than the semester when taken. The repeat shall be completed no later than the semester or summer session registration when a cumulative total of 70 hours has been attempted. (*Effective Date:* For students enrolled for the first time at West Virginia University for a session after May 15, 1979.)

Provided, however, that when a student receives a grade of I and later removes the incomplete grade, the average grade-point standing shall be calculated on the basis of the new grade.

If the final grade of a student in any course is F, the student must take the course again in residence at WVU if the student desires to receive credit for it, unless the dean of the college or school authorizes the exception. The grade of I is given when an instructor believes that the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within the following semester or the next semester in which the student is in residence, and becomes a failure unless special permission is granted by the appropriate Committee on Academic Standards to postpone removal.

For teacher certification the student is responsible for every registration in a course for which a grade of A, B, C, D, F, WU, P, or I is received.

### Absences

Students who are absent from class for any reason are responsible for work missed.

Students should understand that absences may jeopardize their grades or continuance in the course.

Instructors who use absence records in the determination of grades must announce this fact to students (in writing) within the first five class meetings.

It is the responsibility of the instructor to keep an accurate record of all students enrolled.

Instructors may report excessive absences to the student's dean or adviser.

Students who have been absent because of illness, authorized University activities, or other reasons approved by their deans, have the opportunity to make up regularly scheduled examinations.

## Probation, Suspension, Reentry Policy

### Uniform Probation

Any undergraduate student whose cumulative average is 2.0 or higher is in good academic standing in the University. Every baccalaureate degree requires a minimum grade-point average of 2.0 for graduation. (Nothing in this statement prevents a unit from requiring a minimum grade-point average above 2.0, or other academic requirements.)

Students whose cumulative grade-point average is below 2.0 will be notified on semester grade reports that their academic performance is unsatisfactory. Such students may be subject to probation by the dean of their college or school. Students are not on probation until notified, in writing, by their dean, who will establish the terms of the probation.

### Uniform Academic Suspension Regulations

The student whose cumulative grade-point deficiency exceeds the "allowable grade-point deficiency" (see Table) is subject to suspension. Normally, students will be suspended only at the end of the academic year; students exceeding the maximum allowable grade-point deficiency at other times may be put on probation or otherwise warned. However, nothing in this provision shall prevent a dean from suspending a student at any other time of the year if the student's grade-point deficiency exceeds the allowable maximum.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Action on academic suspension is to be taken by the appropriate dean at the end of each semester and such action is to be based on a special report from the Dean of Admissions and Records. The sequence of events in bringing about this action is:

1. The Dean of Admissions and Records will forward a special report at grade-reporting time to the college or school deans for appropriate action.
2. The Dean of Admissions and Records will provide the Vice-President for Academic Affairs with a list of students subject to suspension in each college or school.
3. Deans will report to the Vice-President for Academic Affairs the action taken on the students reported to them for academic suspension by the Dean of Admissions and Records.

Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester, but will not exceed one calendar year from the date of suspension.

Students who have been suspended may petition the Committee on Academic Standards of the college or school to which they wish to be readmitted in care of the dean. The normal periods for consideration of petitions are October 1-November 15 and March 1-April 15 of each academic year.

**MAXIMUM ALLOWABLE GRADE-POINT DEFICIENCY\***

<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>	<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>
0-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	7
50-54	13		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia System of Higher Education excluding grades of P, exclusive of the D-F Repeat Policy.

A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU upon readmission to the University. After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met.

#### **Readmission After Suspension**

During the semester immediately following the effective date of suspension, suspended students may petition in writing for readmission. The college or school petitioned shall establish the terms of readmission for successful student petitioners.

After one calendar year from the effective date of suspension any student who has been once suspended shall, upon written application, be readmitted to the University, with the terms of readmission to be established by the college or school entered by the readmitted student.

A suspended student who is readmitted under the provisions above will be placed on academic probation and will be subject to the maximum grade-point deficiency regulations as before, unless the terms of probation agreed to by the student require otherwise. Each college or school will have the right to establish minimum levels of performance expectations.

(Effective: August 15, 1980, for all students.)



## Withdrawals

### Withdrawal from Class

*Deadlines:* Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a three-week summer session), students may withdraw from individual courses. Deadlines will be published in the *University Schedule of Courses* each semester.

*Procedures:*

1. Before withdrawing from individual classes, students are responsible for consulting their advisers to determine:
  - (a) Whether their course loads would be reduced below the minimum requirements set by their colleges or schools (if so, permission of the Committee on Academic Standards of the respective college or school is required *before* the course adjustment form may be submitted); *or*
  - (b) Whether their course loads would be reduced below the minimum number of hours required to qualify for special status, e.g., financial aid, varsity athletic competition, or international full-time student status; *or*
  - (c) Whether the courses to be dropped are required to fulfill academic probationary conditions; *and/or*
  - (d) Whether the courses from which they desire to withdraw might be
    - (1) Corequisite with other courses they are taking; *or*
    - (2) Prerequisite to other courses required for the next term.
2. Students must obtain adviser signatures on the University course adjustment forms and then submit the forms to the Office of Admissions and Records.
3. Students who withdraw from courses following all the established University procedures before the published deadline will receive a W on the transcript for the appropriate courses. Grade-point averages are not affected in any way by this mark.

### Withdrawal from the University

*Deadlines:* Students may withdraw from the University *any time before the last day* on which regular classes are scheduled to meet. Students who withdraw from the University before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) will receive grades of W in all their courses for that semester or session. Students who withdraw after these deadlines will receive grades of W in those courses in which satisfactory progress had been made; they will receive grades of WU for courses in which progress had been unsatisfactory.

*Procedures:*

1. Students who decide to leave WVU should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all *financial obligations* and for following established procedures, including the completion of forms and the delivery of the completed forms to appropriate officials. The withdrawal becomes official only after the forms have been recorded by the Dean of Admissions and Records.
2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons, still must send to the Office of Student Educational Services notification of their intention to withdraw. The notice should be verified in writing.
3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Office of Student Educational Services (or dean's office of an off-campus instructional unit). Withdrawal procedure will be explained at that time.

4. With the help of their academic advisers, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

## Re-Enrollment After Withdrawal

An undergraduate student who withdraws from WVU in two consecutive semesters (excluding summer session) may not register for further work without approval of the dean of the college or school in which the student wishes to register and subject to conditions set by that dean.

## Advisers, Committee on Academic Standards

### Advisers

Each student entering WVU is assigned an adviser whose duty is to assist students in preparing schedules, assign them to classes, and certify their study lists to the Dean of Admissions and Records. The adviser is expected to give such advice and sympathetic guidance as the students may need in their work at the University. Students are expected to go freely to their advisers to discuss problems.

Advisers, upon receipt of reports of excessive numbers of absences, shall have conferences with the student concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, the case shall be reported to the dean of the college or school.

### Committee on Academic Standards

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

## Cheating

### Procedural Rules for Handling Cheating Cases

The academic development of students and the overall integrity of the institution are primary responsibilities of West Virginia University. Cheating is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

## Responsibilities

Students should act to prevent opportunities for cheating to occur, and in such a manner to discourage any type of cheating.

Faculty are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and security officers, shall promptly report each known case of cheating to the appropriate supervisor, department chairperson, or dean of the college or school concerned.

## Cheating Defined

Cheating is defined to include any of the following:

1. Obtaining help from another student during examinations.
2. Knowingly giving help to another student during examinations.
3. The use of notes, books, or any other source of information during examinations, unless authorized by the examiner.
4. Obtaining without authorization an examination or any part thereof.
5. Plagiarism: submitting for credit, without appropriate acknowledgment, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been knowingly obtained or copied in whole or in part from another individual's academic composition, compilation, or other product, or commercially-prepared paper.
6. Altering, or causing to be altered, the record of any grade in a grade book, office, or other record.
7. Taking an examination or doing academic work for another student, or providing your own work for another student to copy and submit as his/her own.
8. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.

## Procedure for Handling Cheating Cases

*Step 1.* At the discretion of the student, faculty member, and chairperson of the department, some cases involving cheating where there is an admission, in writing, of guilt by the student may be satisfactorily resolved at the departmental level. The maximum penalty at Step 1 is an "F" in the course. Whenever a penalty is administered, the facts of the case shall be reported in writing to the dean of the college or school, and a copy forwarded to the Dean of Student Educational Services for the Dean's permanent records. In cases wherein cheating occurs in a college or school other than that in which the student is a degree candidate, the results of the case shall be reported to the dean of the college or school in which the student involved is enrolled.



*Step 2.* When the student denies guilt, or the faculty member or department chairperson feels the penalties available at Step 1 are insufficient for specific act, the dean of the college or school in which the course is offered shall be notified in writing of the specifics of the case. The dean shall then implement the following steps:

a. Formal notification to the student of the charges and the nature of the evidence, which if proved would justify action.

b. Opportunity for the student and witnesses to respond in writing, rebutting the charges.

c. Opportunity for the student to request that the case be forwarded by the dean to the West Virginia University Student Discipline Committee (Step 3).

d. If the student admits guilt in a signed statement to the dean, or is found guilty, the dean shall prescribe the penalty deemed appropriate. Allowable penalties for Step 2 include "F" in the course, written reprimand, and probation. The dean shall promptly report thereon in writing to the President of the University and shall at the same time place a copy of such report in the permanent record of the student concerned and forward another copy to the Dean of Student Educational Services for his records. A copy of such report will also be forwarded to the dean of the college or school in which the student is enrolled. The purpose of this copy of the report is to provide information in the event that further discipline or penalty may be deemed warranted by the dean of the college or school in which the student is a degree candidate. These records will be maintained by the deans until the student graduates, at which time the records will be destroyed.

e. The dean shall have the prerogative to refer any first-offense cheating case to the West Virginia University Student Discipline Committee. If the cheating allegation is a second offense, it shall be referred automatically to the West Virginia University Student Discipline Committee (Step 3) for action under its guidelines.

*Step 3.* The West Virginia University Student Discipline Committee shall handle cases on cheating referred by a dean or requested by a student. The case must be heard using the Committee on Student Discipline guidelines. If the Student Discipline Committee finds the student guilty of cheating, it will recommend the penalty it deems appropriate under the circumstances to the President of the University and to the appropriate deans. Allowable sanctions in these cases include, but are not limited to, probation, suspension, or expulsion.

## Appeal

The student may appeal to the President of the University any and all decisions of a dean, department chairperson, or Student Discipline Committee, in accordance with standard operating procedures as spelled out in the President's statement on due process of January 29, 1971. Appeals in regard to decisions made by the University's President may be taken to the Board of Regents.

## Criminal Act in Connection with Cheating

If a student admits in writing that he/she has been guilty of cheating, or is found guilty of cheating by the Student Discipline Committee, in a case involving what is believed to be a criminal offense—such as theft of an examination or test materials, alteration of records, forgery, breaking or entering buildings, offices, desks, safes, or filing cabinets, damage to property, and other similar misconduct—the academic penalties and discipline as herein prescribed shall be applied. In addition the facts of the case will be presented to the appropriate prosecuting attorney for further investigation and for such criminal or other action as may be warranted.

# Medical Center Basic Sciences— Programs and Courses of Instruction

The Department of Anatomy, Biochemistry, Microbiology, Pharmacology and Toxicology, and Physiology offer individual graduate programs leading to the M.S. and Ph.D. degrees and provide courses for students of medicine, dentistry, pharmacy, nursing, and other allied health professions.

(Detailed information concerning Graduate School academic information is presented in the *WVU Graduate School Catalog*.)

## Anatomy

The Department of Anatomy offers graduate programs which are committed to the training of competent researchers and capable teachers. This is accomplished by the completion of a carefully designed plan of study tailored to the individual student's interests. The program begins with instruction in basic morphological, developmental, and functional aspects of human anatomy. Additional related course work and electives are required. These selected courses strengthen the area of interest of the student. The student then conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.).

## Admission Requirements

In addition to the admission procedure of the Graduate School, the Department of Anatomy requests that each applicant complete a departmental application form, obtained from the department. After an application is favorably reviewed by the departmental Graduate Committee, applicants are invited for a personal interview whenever practical. The applicant is admitted by a majority vote of the departmental faculty.

It is recommended that the following courses be completed before entering the graduate program: algebra, trigonometry, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology, and two years of French, German, or Russian. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants who desire consideration for financial aid should complete the application process before January 15.

## Doctor of Philosophy

The first year of study is usually occupied with required course work within the Department of Anatomy. These courses include gross anatomy, microanatomy, neurobiology, introduction to research, and seminar in anatomy. Required courses in other basic medical sciences, such as biochemistry and physiology, are usually taken in the second year. Twelve hours of additional graduate-level courses are also required. These requirements will have been satisfied when the student earns a grade of at least B in each of the courses taken in the Department of Anatomy and has maintained a 2.75 overall grade-point average as required by the Graduate School.

To be admitted to candidacy for the Ph.D. degree the student must satisfy the above requirements, pass a written and oral comprehensive preliminary examination, and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree each student must complete a dissertation based on original research and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an Advisory Committee, which is composed of faculty members selected by the student.

The student often culminates the training period with presentations at regional and/or national scientific meetings. The Southern Society of Anatomists and the American Association of Anatomists are the most suitable meetings for this purpose.

## Master of Science

The master's program in Anatomy is offered as a terminal degree only for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D.

An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy plus 6 to 9 hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work the student must complete a thesis based on original research and defend the thesis at an oral examination.

## Research and Instruction

**Research Areas**—Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues, and organs, under normal and experimental conditions with *in vivo* microscopic, histochemical, electron microscopic, autoradiographic, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration and the effects of drugs and other environmental agents on development. Neuroanatomy: Experimental, comparative, and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

## Anatomy (Anat.)

101. *Principles of Human Anatomy*. (For paramedical students only.) I. 3-4 hr. PR: Biol. 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.
102. *Gross Anatomy*. (For physical therapy students.) II. 3 hr. PR: Anat. 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck.
103. *Microanatomy*. (For physical therapy students.) I. 2 hr. PR: Consent of instructor or chairperson. Introductory cell and tissue structure.
109. *Oral Histology*. (For dental hygiene students.) II. 3 hr. PR: Consent of instructor or chairperson. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.
152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent of instructor or chairperson. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture. (*Same as Sociology and Anthropology 152.*)



301. *Gross Anatomy of the Trunk.* (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum.
302. *Gross Anatomy of the Head and Neck.* (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 3 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the head and neck.
304. *Gross Anatomy of the Extremities.* (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the upper and lower extremities.
305. *Microanatomy.* (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities.* (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 4 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the back, upper extremities, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy.* (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy.* (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system. (See also CC MD 375, Neurobiology.)
309. *Microanatomy and Organology.* (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 4 hr. PR: Dental student standing or consent of chairperson. Cells, tissues, and organs.
312. *Special Topics in Anatomy.* I, II. 2-4 hr. per sem. PR: Anat. 301 or 306; and Anat. 305 or 309; consent of chairperson. Different topics of current interest in anatomy that are not included in the regular graduate courses.
314. *Applied Anatomy.* I, II. 2-6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.
315. *Craniofacial Osteology and Myology.* I. 3 hr. PR: Dental, medical or graduate student standing or consent of instructor. Study of craniofacial embryology, morphology and physiology with special emphasis on articulations and their clinical applications.
316. *Craniofacial Growth and Maturation.* II. 3 hr. PR: Anat. 315 or consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.
318. *Oral Histology and Embryology.* (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.
375. *Neurobiology.* (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
401. *Advanced Gross Anatomy.* I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 306, 307 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.
402. *Advanced Developmental Anatomy.* II. 2-4 hr. per sem. PR: Anat. 301, 302, 304, and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.

403. *Seminar*. I, II. 1-6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.
405. *Experimental Embryology*. II. (Alternate Years.) 3 hr. PR: Embryology and cellular physiology or biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. (Course may be repeated.) PR: CC MD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. (Alternate Years.) 3 hr. PR: Anat. 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent of instructor or chairperson. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
491. *Advanced Anatomy*. I, II. 2-8 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Committee.)

## Biochemistry

Graduate programs in the Department of Biochemistry are designed to assist students in the development of their own capabilities for independent thought and research. All students are provided with a strong biochemistry background; however, the program has sufficient flexibility to allow individual students to select advanced specialty courses in biochemistry which are of particular importance to their career goals. Faculty research problems are of current interest and are diverse, reflecting the broad spectrum of areas encompassing biochemistry. Specific major areas of research in the Department of Biochemistry include: elucidation of specific mechanisms of enzyme catalysis; protein conformation changes induced by metals; cytochrome P-450 oxidative processes; characterization of immune complement interaction with red cell membranes; investigations into microbial infection processes; membrane alteration during differentiation in the cellular slime mold; hormonal regulation of animal cell metabolism; control of secretory processes; tRNA synthesis and maturation; regulation of mammalian cell growth; control of eukaryotic DNA syntheses; carcinogenesis; energy-coupled ATP synthesis/hydrolysis.

## Admission Requirements

A prospective graduate student should hold a bachelor's degree with a science major and should have successfully completed the following courses in qualitative-quantitative chemical analysis, organic chemistry, calculus, physics, and physical chemistry. In some cases, a deficiency in the above may be made up after admission to the program.

Application is made by submission of the following items to the Department of Biochemistry: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's present abilities and potential; (c) official transcript of the applicant's college grades; and (d) official copy of Graduate Record Examination (GRE) scores. Due to the sequence of courses, entrance in the fall is preferred; but exceptions may be made as necessary. Application material and program details may be obtained by writing: The Graduate Coordinator, Department of Biochemistry, School of Medicine, West Virginia University, Morgantown, WV 26506. The deadline for receipt of applications and supporting documents by the department is June 1; to be considered for financial support, applications should be submitted much earlier, preferably by February 1.

## Doctor of Philosophy

To insure that all students become familiar with the basic principles of biochemistry, the first year of the Ph.D. program is primarily devoted to course work. In addition to formal courses during the first semester, students participate in a laboratory program which involves all faculty members. This laboratory experience is designed to illustrate the basic research skills involved in biochemistry. During the second semester, students will undertake research in at least two laboratories of their choice. During the first two years, the students also are given monthly cumulative examinations, designed to assure the faculty that the students are developing a working knowledge of the field of biochemistry appropriate to a doctoral candidate. Students are required to pass nine cumulative examination questions during this period to fulfill the written examination requirement for the Ph.D.

Upon successful completion of the first year, students will choose a dissertation research adviser, at which time emphasis will be placed on research under the direction of the research adviser. During the second year, specialized courses in biochemistry will be offered as the students continue their research programs. During subsequent years, the students emphasize independent thesis research, and a few formal courses are taken.

An essential component of the Ph.D. program is participation in departmental journal clubs and seminars. Both students and faculty participate, thus students learn to effectively organize and present research material to a large group of people.

Completion of the Ph.D. program is realized when the student successfully presents the results of his/her research to both the Department of Biochemistry and a graduate advisory committee. Typically, four years are required to realize this goal.

## Master of Science

The Department of Biochemistry offers the thesis master's degree. This program involves completion of a master's research project in addition to formal course work. The program for this degree is essentially identical to that for the Ph.D. program; however, only six cumulative examination questions must be passed, and thesis-level research completed.

## Research and Instruction

*Research Areas*—Hormonal regulation of hepatic carbohydrate metabolism. Enzyme kinetics. Lipid metabolism and biogenesis of membranes. Structure and transfer RNA; RNA synthesis in mammalian cells. Atherosclerosis. Physical chemistry of proteins. tRNA methyltransferases in normal and tumor systems. Influence of nutrition on tissue protein and amino acid metabolism. Chemistry of host-parasite relationship. Interaction of macromolecules in biological systems. Physical biochemistry. Nutritional oncology. Immunochemistry. Mechanisms of enzyme action. Energy-coupled ATP synthesis/hydrolysis. Role of hormones on secretory mechanisms.

## Biochemistry (Bioch.)

139. *Introduction to Biochemistry*. I. 4-5 hr. PR: Inorganic chemistry. (For medical technology and pharmacy students; others by consent.) Lecture and conference, 4 hr.; Laboratory, 1 hr.
192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a maximum of 12 hr.) PR: Consent.
231. *General Biochemistry*. I. 7 hr. PR: Inorganic chemistry, organic chemistry. (For medical students and regular full-time graduate students in basic sciences departments.) Consists of main lectures (all); conferences (medical students); and lecture/problem sessions (graduate students).



239. *Clinical Chemical Techniques*. II. 4 hr. PR: Bioch. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)
305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, organic chemistry, and consent. (Dental and graduate students.) Lecture, conference, and demonstration.
399. *Special Topics*. I, II. 1-2 hr. PR: Consent.
423. *Immunochemistry*. II. 2 hr. PR: Consent. Chemistry and biochemistry of antibodies, antigens, and complement.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Physical techniques in biochemistry: nucleic acids and membrane biochemistry. Designed primarily to provide a background for students who will do research in biochemistry and molecular biology. Emphasis will be on basic principles, concepts and techniques useful for the solution of important biological research problems.
496. *Graduate Seminar*. I, II. 1 hr. PR: Bioch. 231 or equiv.; consent. Presentation and discussion of special topics.
497. *Research*. I, II, S. 1-15 hr.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

### Conjoined Basic Sciences Courses (CC MD)

320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
350. *Radiation Safety and Isotope Usage*. II. 1-2 hr. PR: Phys. 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; ERDA (formerly AEC) and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
370. *Medical Genetics*. (For medical and limited number of graduate students.) II. 1 hr. PR: Consent. Genetics and heritable diseases in man.
375. *Neurobiology*. (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of medical curriculum. (Graded as S or U.) The selective program for fourth-year medical students offers a wide range of opportunities in the basic sciences, medical specialties and subspecialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the Charleston Division, WVU Medical Center; the Wheeling Division, School of Medicine; and the Veterans Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans the individual program, with faculty advice. Flexibility is permitted. With consent of the instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See intramural and extramural folders, published annually, that describe the selective opportunities.)

## Microbiology

The Department of Microbiology offers programs of study leading to the degrees of Master of Science and Doctor of Philosophy in Medical Microbiology. Students are given extensive training in microbiological research methodology. The program aims towards training students capable of designing and carrying out their own research programs and teaching microbiology.

## Admission Requirements

Applicants should have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics—including calculus—in order to be considered for admission. Applicants must submit to the Department of Microbiology a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores—both aptitude and advanced. In addition, transcripts and an official application for admission to the Graduate School must be sent directly to the WVU Office of Admissions and Records. Applicants for admission to a degree program should have a grade-point average of 3.0, or better, and a score of 600, or above, on each of the GRE examinations. Early application is encouraged. Applicants desiring financial aid should complete their application before January 1. All applications must be completed by June 1. Applications for admission in the spring semester must be completed by November 1.

## Program Requirements

Every student must take a two-semester sequence in basic microbiology (M. Bio. 310 and 311) and two semesters in biochemistry. Seminar is a required course for all students each semester that they are in residence. All students in the Department of Microbiology are also required to participate in teaching at least one semester a year. The remaining courses are selected by the student and the advisory committee from courses in microbiology numbered M. Bio. 317 or higher, and from outside the department.

The Department of Microbiology also has informal noon-hour journal clubs in immunology, virology, and bacteriology and parasitology.

The Master of Science program requires 30 hours of course work, of which at least 20 hours must be in microbiology. Six hours must be in research. A research thesis and a final oral examination are required. A grade-point average of at least 3.0 must be achieved. In general, two years are needed to complete the M.S. program.

The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation, and passing of qualifying and final oral examinations. Appropriate course work with a grade-point average of 3.0 is also required. Where appropriate, course work in related subjects such as calculus, physical chemistry, and statistics will be required. Three years are usually needed to complete the Ph.D. program.

For additional information, write to the Chairperson, Department of Microbiology, WVU Medical Center, Morgantown, WV 26506.

## Research and Instruction

*Research Areas*—Pathogenic Bacteriology: mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: nutrition and metabolism of a variety of pathogenic microorganisms; growth and protein synthesis in obligate intracellular bacteria. Genetics: basic studies on the mechanisms of genetics including transfer of genetic information. Virology: basic studies on viral-tumor relationships; virus-induced antigens in transformed cells; pathogenesis of lymphocytic choriomeningitis virus. Parasitology: host-parasite relationships between helminth parasites and insects and vertebrate hosts. Electron Microscopy: cytological studies of the fine structure of microorganisms and the influence of environment on these structures. Immunology: studies on the mechanisms of antigen-antibody reactions

and the development of hypersensitivity; immunopathology of pulmonary disease; immunogenetics of lymphocytes; mechanisms of cellular immunity. Other programs: detection of environmental pollutants; effect of environmental agents on host resistance.

## Microbiology (M. Bio.)

26. *Microbiology*. (For students in the paramedical sciences.) I. 4 hr.
220. *Microbiology*. (For pharmacy students.) II. 4 hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
223. *Microbiology*. (For medical technology students; graduate students with consent.) II. 5 hr. PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
224. *Parasitology*. (For medical technology students.) II. 4 hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
301. *Microbiology*. (For medical students only.) I. 5-7 hr. PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms. Emphasis on use of microbiology in solving clinical problems.
302. *Microbiology*. (For dental students only.) I. 5 hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR or Conc.: Biochemistry; consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. Life cycles of a few model systems. (Students may enroll for one to three portions of the course.)
311. *Principles of Infection and Resistance*. II. 1-5 hr. PR or Conc.: Biochemistry; consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students may enroll for one to five portions of the course.)
317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available.
327. *Parasitology*. (For graduate students.) II. 4 hr. PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*.
- Pathogenic Virology*. I. 3 hr. PR: M. Bio. 310 and 311 or equiv., consent. Pathogenesis of medically important viruses and mechanisms for their control. (*Course will not be offered in 1981-82.*)
- Pathogenic Bacteriology*. II. 3 hr. PR: M. Bio. 311, consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease. (*Course will not be offered in 1981-82.*)
- Clinical Laboratory Bacteriology*. I, II. 2-4 hr. PR: M. Bio. 311 or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. Laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)
- Microbial Genetics*. I. 4 hr. PR: M. Bio. 310 or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.
- Bacterial Physiology*. II. 2 hr. PR: M. Bio. 310, biochemistry, consent. The physiology and metabolism of bacteria of medical, industrial, and ecological importance.



*Immunobiology*. II. (Alternate Years.) 2 hr. PR: M. Bio. 311, consent. Discussion of the biological and cellular aspects of immunology. Immunobiology, immunopathology, and cellular immunology receive strong emphasis. (This course is designed to complement Bioch. 491.)

*Medical Mycology*. I. 4 hr. PR: M. Bio. 311 or equiv. Advanced study of the fungi of medical importance, including the pathobiology of mycoses and toxicoses.

*Comparative Cytology*. II. 4 hr. PR: Consent. Limited enrollment. Basic features in structure and function of animal, plant, and microbial cells and their organelles. Projects in electron microscopy.

*Cell and Molecular Biology of Eukaryotes*. II. 2-6 hr. PR: Consent. Interdepartmental team-taught course. Modular approach: (1) overview and cell growth; (2) membrane structure and function (3) tumor biology. In alternate years, the three modules offered are (1) above and (4) somatic cell genetics and chromosome structure; and (5) hormone action and gene expression.

*Tumor Virology*. II. 3 hr. PR: Biol. 315 or equiv., consent. A consideration of the molecular and biochemical aspects of viruses which cause tumors and the mechanisms by which they cause cellular transformation. (Course will not be offered in 1981-82.)

*Clinical Laboratory Virology*. S. 3 hr. per 6-week session. PR: Consent. Lectures and laboratories on isolation of viruses from clinical specimens. Includes serological methods.

496. *Seminar*. I, II. 1 hr. PR: M. Bio. 310 or equiv. (Graded as S or U.)

497. *Research*. I, II, S. 1-15 hr. PR: M. Bio. 310 or equiv. Students may enroll more than once. (Graded as S or U.)

## Pathology

*Research Areas*—Atherosclerosis; thrombosis; platelet aggregation and function; lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electronmicroscopic) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; biomedical application of laboratory medicine.

## Pathology (Path.)

128. *Introduction to General Pathology*. I. 2 hr. PR: Enrollment in dental hygiene or physical therapy. A study of the basic pathologic processes in man.

129. *Oral Pathology*. II. 3 hr. PR: Path. 128, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.

328. *General Pathology*. (For dental students and certain graduate students with consent of the chairperson.) II. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.

338. *Oral Pathology I*. II, S. 3 hr. PR: Dental student or consent. Comprehensive study of oral/facial/jaw diseases of local and systemic importance.

350. *Hematology*. 3 hr. PR: Consent.

351. *Pathology and Laboratory Medicine*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) I, II. 15 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systemic approach to disease states.

353. *Oral Pathology II*. I. 2 hr. PR: Path. 338; consent. Continuation of Path. 338.

355. *Diagnosis and Management of Oral Disease*. II. 1 hr. PR: Path. 353 or consent; discussion of numerous clinical cases with emphasis on diagnosis and treatment planning.

356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 or 354; consent. Microscopic and gross specimens from selected autopsies.
382. *Oral Histopathology*. (For graduate and dental students.) I, II. 1-2 hr. PR: Consent. Advanced study of the microscopic aspects of oral and paraoral disease through weekly seminars with emphasis placed on diagnosis.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.
497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology and Toxicology

Pharmacology and Toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the degrees of Master of Science and Doctor of Philosophy, with research concentrations in such areas as autonomic pharmacology, biochemical pharmacology, neuropharmacology, psychopharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, pharmacogenetics, malarial chemotherapy, and toxicology.

### Admission Requirements

Regular applicants for the graduate program in pharmacology and toxicology should present as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; five semesters of chemistry including two semesters of organic chemistry and one semester of physical chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination—including the advanced test in either chemistry or biology—are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write: Director of Graduate Studies, Department of Pharmacology and Toxicology, WVU Medical Center, Morgantown, WV 26506.

### Master of Science

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is recommended as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project. The course work requirements for the M.S. in pharmacology and toxicology usually consist of Physiology 344 and 345, Biochemistry 231, Statistics 311, Pharmacology and Toxicology 361, 363, 364, 461, 462, and 497. Some students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research to date before taking either the written or the oral Ph.D. qualifying examinations.

## Doctor of Philosophy

Before official admission to candidacy for the doctorate, the student must satisfactorily complete both a written examination and an oral comprehensive qualifying examination. The written examination is generally taken during the sixth semester in the program (not counting summers) on or about March 1. The student will generally have some choice as to questions which must be answered. Two days (6 hours a day) are generally required to complete the written examination. When a student has successfully passed the written examination, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department — is appointed and constitutes the oral examining body. The oral portion of the qualifying examination is held not less than two nor more than six weeks after the successful completion of the written examination.

### Dissertation

Upon admission to candidacy for the degree of Doctor of Philosophy, the candidate must select a topic for the dissertation under the direction of the candidate's adviser, complete a dissertation that makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

## Research and Instruction

*Research Areas* — Autonomic pharmacology; autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release and metabolism of transmitters and adrenal medullary hormones. Chemotherapy: Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: Biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system. Toxicology: Metabolism of toxic agents, pulmonary toxicology, environmental toxicology, perinatal pharmacology and toxicology. Electron microscopy: Effects of drugs on the ultrastructure of cells.

## Pharmacology and Toxicology (Pcol.)

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
242. *Pharmacodynamics and Therapeutics II*. (For pharmacy and graduate students.) I. 6 hr. PR: Phar. 240 or consent. Continuation of Phar. 240.
360. *Pharmacology*. (For dental and graduate students.) I. 4 hr. PR: Dental student standing or consent. Lecture and demonstrations on pharmacologic actions and therapeutic uses of drugs.
361. *Pharmacology*. (For medical students and a limited number of regular, full-time graduate students in medical basic sciences departments.) II. 6 hr. PR: Consent of department chairperson. Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
363. *Toxicology*. II. 3 hr. PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on biochemical and molecular mechanisms of chemical toxicity.



364. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology including physiochemical properties, absorption, distribution and metabolism of drugs, drug receptor theory, and molecular mechanisms of toxicity. (*Offered Every Third Year.*) (*Course will be offered in 1983-84.*)
365. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of specialized areas of pharmacology and toxicology including biochemical, endocrine, pulmonary, and cardiovascular pharmacology. (*Offered Every Third Year.*) (*Course will be offered in 1981-82.*)
366. *Advanced Pharmacology (Laboratory in Drug Evaluation)*. S. 1-3 hr. PR: Consent. Laboratory procedures and demonstrations in assessing drug action.
367. *Advanced Neuropharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures on the actions of drugs on the central and peripheral nervous system. (*Offered Every Third Year.*) (*Course will be offered in 1982-83.*)
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pcol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology and toxicology. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.
490. *Teaching Practicum*. I, II. 1-2 hr. per sem. PR: Pcol. 361 and consent. Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology and toxicology. (For advanced graduate students.)
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. (Study may be independent or through specially scheduled lectures.)
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology

The objective of the Department of Physiology graduate program is to educate physiologists in the methods of conducting independent research of high quality and of effective teaching. The department's graduates are conversant with all aspects of physiology and are prepared to interact creatively with scientists in related fields. To this end the program leading to the degree of Doctor of Philosophy (Ph.D.) emphasizes close interaction of faculty with students and a high faculty/student ratio. The Master of Science (M.S.) program includes 24 hours of course work and a research project leading to the thesis.

## Admission Requirements

Individuals from a wide variety of backgrounds study physiology as one of the basic medical sciences. It is, in fact, not uncommon to find physiologists with such diverse backgrounds as biology, chemistry, physics, psychology, engineering, and mathematics. The department encourages the participation of qualified individuals from many undergraduate and graduate disciplines. There are, however, certain prerequisite courses a student must take either before enrollment or during the first year of the program. These prerequisites, designed to give a student the proper foundation for advanced study in physiology, are: Biology (2 semesters), Physics (2 semesters, calculus-based desirable), Calculus (2 semesters, 3 desirable), and Organic Chemistry (1 semester). Physical Chemistry is not required, but is desirable.

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, a completed departmental application form, and Graduate

Record Examination scores (aptitude and one advanced test). A bachelor's degree or equivalent is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs may be obtained by writing to the Graduate Adviser, Department of Physiology, West Virginia University School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as June of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

## Doctor of Philosophy

The first year in the program normally includes the following courses: Medical Physiology (10 hours), Biochemistry (7 hours), Statistics (3 hours), Neurophysiology (3 hours) or Neurobiology (6 hours), Graduate Colloquium (2 hours), Physiological Methods (variable credit), electives, and prerequisites (a limited number of which may be made up during the first year). The first-year curriculum familiarizes the student with some of the same basic sciences material presented to the medical students. Medical physiology, biochemistry, and neurophysiology/neurobiology are part of the medical curriculum. The courses are team-taught by scientists specializing in each of the areas covered. In addition, the student is introduced to the full range of activities in the department through the Graduate Colloquium. Physiological Methods provides a foundation in the research strategies, techniques, and tools used by physiologists.

During the first summer, students may begin research projects in departmental research laboratories of their choice. They also may take elective courses or make up prerequisites.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses normally include: Advanced Physiology (12 hours), Graduate Colloquium (2 hours), Seminar (2 hours), and Teaching Practicum (assisting in laboratory/demonstrations, conducting small-group conference sessions, giving lectures). Commonly chosen electives include pharmacology and toxicology, and advanced or specialized topics in biochemistry. The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. Students begin to present discussions of research topics in the Graduate Colloquium and Seminar.

After completion of the second academic year, the student takes a qualifying examination consisting of a written comprehensive part and both a written and oral research design part. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy in Physiology.

During the third and fourth years the student may enroll in elective courses. Yearly participation in the Teaching Practicum provides experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research, with presentations about the research in the Graduate Colloquium. During these years the students will attend and present papers at national meetings of scientific societies (American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences.) The Ph.D. program is generally completed in four years.

## Master of Science

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first academic year and first summer are likewise identical for the master's and doctoral students. During the second year of the master's program,

the student enrolls for 6 hours of Advanced Physiology, Graduate Colloquium, and sufficient electives to fulfill the required 24 hours of course work. In addition, 6 hours of research are directed toward completion of the thesis. The M.S. program is usually completed in two years.

## Research and Instruction

*Research Areas*—Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, muscle neural, renal, and respiratory physiology.

## Physiology (Physi.)

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lec., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relations to normal physiology.
248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lec., 2 lab.
341. *Physiological Methods I*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology. (Designed to be taken in conjunction with Physi. 345.)
342. *Physiological Methods II*. I. 1-4 hr. PR: Consent. Research techniques and strategies for physiology. (Designed to be taken in conjunction with Physi. 344.)
343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lec., 1 conf., 1 lab.
344. *Medical Physiology*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 5 lec., 1 conf.-lab.
345. *Medical Physiology II*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 5 hr. PR: Physi. 344 and consent of department chairperson. Continuation of Physi. 344. 5 lec., 1 conf.-lab.
346. *Neurophysiology*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 3 hr. PR: College algebra, physics, and consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 2 lec., 1 conf.
350. *Graduate Physiology 1*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) I. 6 hr. PR: Calculus, college physics, organic chemistry, biology, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control.
351. *Graduate Physiology 2*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) II. 6 hr. PR: Physi. 344 or 350, and consent of department chairperson. Continuation of Physi. 350.



399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate status and consent. (Graded as S or U.)
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.
497. *Research in Physiology*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1-6 hr. PR: Consent. (Graded as S or U.)

# School of Dentistry

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Dental auxiliary careers such as dental hygiene may be pursued. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

The School of Dentistry of West Virginia University offers programs of education leading to the degrees of Doctor of Dental Surgery, Master of Science with majors in Endodontics and Orthodontics, and Bachelor of Science in Dental Hygiene. One oral surgery internship and two oral surgery residencies are offered by the Department of Oral Surgery. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Four general practice residencies are offered by the School of Dentistry and University Hospital. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by an associate dean, two assistant deans, and the clinical and medical center basic sciences chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of the University.

## Doctor of Dental Surgery Program

The School of Dentistry offers a program of education leading to the degree of Doctor of Dental Surgery (D.D.S.). The requirements for admission and the curriculum conform to the standards established by the American Dental Association Commission on Accreditation of Dental and Dental Auxiliary Educational Programs.

## Admission

*Application for admission in the Fall of 1982 should be made promptly upon completion of the 1980-81 school year, even if the applicant has not completed all the requirements as listed.*

*The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry in the Fall of 1982, is November 1, 1981. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet and thus should be reviewed carefully by the applicant. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.*

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.* Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

Each applicant is required to satisfactorily complete the Dental Admission Test. It is suggested that the test be taken in April, before making application in June, for admission in the fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisite courses should include:

	<i>Sem. Hr.</i>
English Composition and Rhetoric, or equivalent .....	6
Zoology or Biology (with laboratory) .....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

All applications are reviewed and those most qualified are required to appear for a personal interview. The Committee on Admissions will advise the applicants of the time and place of the interview.

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements as stated above, appropriate completion of all application instructions, submission of all transcripts from each college attended, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding admission enrollment).

*Final acceptance of a student is contingent upon satisfactory completion of all requirements.*

## Promotion

At the end of each grading period (i.e., each academic semester or session) all students will have their individual progress reviewed by the academic standards committee convened for their class. The progress of each student in the curriculum is governed by a set of minimum acceptable performance standards upon which the academic standards committee bases its decisions.

The standards consist of three categories: (1) Scholastic Performance; (2) Clinic Utilization; and (3) Professional Development.

Scholastic performance requires that each student must earn a specified grade-point average to be promoted to the succeeding year.

Clinic utilization requires that each student as he/she progresses through the curriculum will utilize that percentage of time specified for the development of clinical competency.



Professional development is an important component of the study of dentistry. The criteria for determining this development are based on the students' personal behavior and patient management.

These performance standards are explained in detail in the Curriculum and Academic Standards Statement for the WVU School of Dentistry. All first-year students are presented this statement prior to entering school and are required to acknowledge that they have read the material therein contained by written signature.

At the close of the school year, following the Committee on Academic Standards meetings, the status of each student is reported to the Dean and faculty council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat the year, be suspended or dismissed from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the appropriate Committee on Academic Standards and the Dean.

## Requirements for Degree

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.

2. Shall have completed the prescribed curriculum for each of the academic sessions.

3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.

4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

Attendance at the spring Commencement is voluntary. If you don't plan to attend, leave the complete mailing address to where you want your diploma mailed at the Dean's office.

## Curriculum

The School of Dentistry recognizes its obligation to produce professionals capable of meeting the dental health needs of society and providing leadership for the dental profession. Therefore, the school offers a four-year program leading to the degree of Doctor of Dental Surgery that provides students with a learning environment in which to develop the technical competence, intellectual capacity, and professional responsibility necessary to meet the dental health needs of a society in a state of constant transformation. In order to insure the achievement of these goals, the dental curriculum is continually reviewed and revised.

The basic required courses in the curriculum are presented throughout the first six semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general practice

# SCHOOL OF DENTISTRY CURRICULUM PLAN

	First Year (1,200 hr.)	Summer Session (320 hr.)	Second Year (1,200 hr.)	Summer Session (320 hr.)	Third Year (1,200 hr.)	Summer Session (320 hr.)	Fourth Year (1,200 hr.)
100	Basic Biologic Science	Basic Dental Science	Basic Biologic Science	Basic Dental Science	Basic Biologic Science	Bio-Clin. Sci. Comm. Dent.	Electives and Clinical Dentistry
				Bio-Clinical Sciences	Bio- Clinical Sciences	Clinical Dentistry	
				Comm.Dent.			
		200	Clinical Dentistry	Bio- Clinical Sciences	Unscheduled Time		
300	Unsched.	Comm. Dent.					
400	Basic Dental Science		Basic Dental Science	Clinical Dentistry	Unscheduled Time		
500							
600							
700							
800	Basic Dental Science	Bio- Clinical Sciences	Clinical Dentistry	Unscheduled Time			
900							
1,000							
1,100							
1,200	Bio-Clinical Sciences	Comm. Dent.	Clinical Dentistry	Unscheduled Time			
	Comm. Dent.						
	Clinical Dentistry						
	Unscheduled Time						

track, basic biologic science track, and specific clinical interest track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. Fourth-year students are required to register for at least 3 hours of electives during each semester enrolled and must register for those clinical courses requiring added clinical experience to attain competency.

At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and at the same time serve as a means of encouraging students to continue their education throughout their professional careers.

The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairman and the Assistant Dean for Instruction. The student will pursue the approved curriculum through completion of the D.D.S. program.

As a part of the curriculum, fourth-year students are required to participate in mock board examinations.

All students are required to receive at least six weeks of clinical training in the School of Dentistry's extramural program. Students must complete satisfactorily all courses attempted.

Outstanding students having an accumulated grade-point average of 3.0 or above, having developed competency in all clinical disciplines, and having met all other requirements are eligible for consideration for graduation at the end of the third eight-week summer session.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and renders a much needed service to several thousand patients annually.

## Books and Instruments

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses.

## Organizations

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the



American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

*Dental Fraternities.* Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

## Courses of Instruction in Dentistry (Dent.)

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Assistant Dean for Instruction.

### Community Dentistry

Professor McCutcheon (*Chairperson*); Adjunct Associate Professor Murphy; Associate Professors Ingersoll, Jagannathan, Pawlicki, and Wilson; Assistant Professors Abrams, Dice, and Meckstroth; Visiting Educational Specialist Hutton; Instructors Bucklew, Kuhn, Taylor, and Wright.

315. *Community Dentistry 2.* II. 3 hr. A course encompassing the study of professional communication and the introduction to the theory and practice of preventive dentistry.
320. *Community Dentistry 1.* II. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
326. *Community Dentistry 3.* II. 2 hr. A course covering the principles of human behavior and their application to understanding patient problems, patient management, and dentist-patient communication.
330. *Community Dentistry 4.* II. 1 hr. Lectures and field experience provide the student with the basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
332. *Community Dentistry 5.* S. 1 hr. A course providing lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition and microbiology.
352. *Community Dentistry 6.* I, II. 2 hr. Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
354. *Community Dentistry 7.* II. 1 hr. PR: Departmental consent. Lectures covering the origin and development of dentistry.
394. *Community Dentistry 8.* I, II. 1-15 hr. Continued field experience in various aspects of community health.

## Dental Anatomy

Associate Professor VandenBosche; Assistant Professors Foor and Rodeffer; Instructor Lopez.

310. *Dental Anatomy and Occlusion*. I. 4 hr. Anatomy of individual teeth, both permanent and primary, in regard to form and function and their static and dynamic occlusal relationships.

## Dental Practice Management

Professors Puderbaugh (*Chairperson*) and Thomas; Assistant Professors Hickman, Mitchell, and Walker; Instructor Lopez; Lecturer Cady.

325. *Practice Management 1*. II and S. 2 hr. (Dental Auxiliary Utilization.) Designed through didactic and clinical experience to prepare dental students in the concepts of four-handed dentistry.
371. *Practice Management 2*. Yr. and S. 4 hr. PR: Dent. 325. Fundamentals of practice management, including organization and development of the practice, personnel and financial management, introduction of TEAM dentistry, continuation of clinical practice using auxiliaries, including those trained in expanded functions.
372. *Practice Management 3*. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.
373. *Practice Management 4*. II. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
375. *Practice Management 5*. I, II. 1-2 hr. PR: Dent. 371. Continuation of clinical practice using auxiliaries, including those trained in expanded functions.

## Dental Materials

Professors Overberger and Gaver; Associate Professor Weaver; Assistant Professor Hart.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Endodontics

Professors Alberico, Biddington, Griffin, and Skidmore (*Chairperson*); Instructors Baur, Beaumont, Funderburk, and Stewart.

321. *Endodontics 1*. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
342. *Endodontics 2*. Yr. and S. 1 hr. Minor clinical endodontic procedures which will stress the application of principles presented in Dent. 321.
362. *Endodontics 3*. Yr. and S. 2 hr. PR: Dent. 321, 342. Lectures on rationale, diagnosis, prevention and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae; also correlating and applying the basic biological and basic dental sciences in the treatment of pulpal and periapical disease.
380. *Endodontics 4*. I and II. 1-2 hr. Continued clinical endodontics stressing the diagnosis and treatment of endodontic problems.
390. *Clinical Endodontics*. I, II, S. 1-5 hr. (*May be repeated for credit*.) PR: Graduate of an accredited dental school and admission to the Advanced Educational Program in Endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.

# SCHOOL OF DENTISTRY COURSE SCHEDULE

First Year	1st. Sem.	2nd. Sem.	Third Year	1st. Sem.	2nd. Sem.	S.
300 — Anesthesiology			350 — Removable Prosthodontics (5)	x		
303 — Oral Diagnostic Techniques		x	352 — Community Dentistry (6)		x	
304 — Operative Dentistry (1)		x	353 — Oral Oncology		x	
305 — Biochemistry		x	354 — Community Dentistry (7)			x
306 — Gross Anatomy (Trunk and Extremities)		x	355 — Clinical Pathology Correlation Conference			
307 — Gross Anat. (Head and Neck Neuroanatomy)		x	357 — Fixed Prosthodontics	x	x	
309 — Microanatomy and Organology	x		358 — Operative Dentistry (5)	x	x	
310 — Dental Anatomy and Occlusion	x		359 — Oral Surgery (2)	x	x	
311 — Periodontics (1)			360 — Pharmacology			
312 — Dental Materials	x		361 — Pedodontics (3)	x	x	
313 — Removable Prosthodontics (1)	x		362 — Endodontics (3)	x	x	
314 — Fixed Prosthodontics (1)			363 — Periodontics (3)	x	x	
315 — Community Dentistry (2)		x	364 — Oral Diagnosis (2)			
316 — Removable Prosthodontics (2)			365 — Clinical Orthodontics (1)	x	x	
318 — Oral Histology and Embryology			367 — Clinical Oral Roentgenology (1)			
320 — Community Dentistry (1)	x		371 — Dental Practice Management (2)	x	x	
321 — Endodontics (1)	x		372 — Dental Practice Management (Ethics) (3)			
322 — Operative Dentistry (2)		x	373 — Dental Practice Management (4)	x	x	
323 — Clinic Orientation			374 — Principles of Medicine (4)			
<b>Second Year</b>			<b>Fourth Year</b>			
301 — Microbiology	x		375 — Dental Practice Management (5)	x	x	
325 — Dental Practice Management (1)		x	376 — Removable Prosthodontics (6)	x	x	
326 — Community Dentistry		x	377 — Periodontics (4)	x	x	
327 — Oral Roentgenology	x	x	380 — Endodontics (5)	x	x	
328 — General Pathology			382 — Advanced Oral Histopathology (Elective)	x	x	
329 — Operative Dentistry	x		383 — Operative Dentistry (6)	x	x	
330 — Community Dentistry (4)			384 — Oral Surgery (3)	x	x	
332 — Community Dentistry (5)			385 — Clinical Orthodontics (2)	x	x	
333 — Physical Diagnosis (1)		x	386 — Pedodontics (3)	x	x	
334 — Removable Prosthodontics (3)			387 — Oral Diagnosis (3)	x	x	
335 — Pedodontics (1)	x	x	389 — Fixed Prosthodontics (4)	x	x	
336 — Fixed Prosthodontics (2)	x	x	394 — Community Dentistry (8)	x	x	
337 — Oral Diagnosis (1)	x		395 — Hospital Dentistry (5)	x	x	
338 — Oral Pathology		x	396 — Clinical Oral Roentgenology	x	x	
339 — Oral Surgery (1)		x	397 — Special Topics*	x	x	
340 — Periodontics (2)	x					
341 — Removable Prosthodontics (4)						
342 — Endodontics (2)						
343 — Fundamentals of Physiology	x					
345 — Principles of Orthodontics	x					
346 — Orthodontics Technics						
347 — Management of Medical Emergencies (2)		x				
348 — Operative Dentistry (4)		x				

\*See Courses of Instruction in Dentistry.



391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Hospital Dentistry

Professors Knapp, Lapp, Waldman, and Welch (*Chairperson*); Professor Moorman; Assistant Professors Bakos, Black, Haddox, Jackfert, Mitchell, Salzer, Syner, and Wine; Instructors Coffman, Cogan, Courtney, Fagan, Farris, Hancock, Klein, Lee, Patthoff, Payne, Snyder, and Wilbourn.

333. *Physical Diagnosis 1*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
347. *Management of Medical/ Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.
374. *Principles of Medicine 4*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.
395. *Hospital Dentistry Practicum*. I, II, S. 1-15 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in Dent. 349.

## Operative Dentistry

Professors Sausen (*Chairperson*) and Gaver; Associate Professors Chapman, Frye, VandenBosche, and Weaver; Assistant Professors Foor, Gladwin, Hart, Jackson, Kelly, Naylor, Rodeffer, and Utt; Instructor Bennett.

304. *Operative Dentistry 1*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Gold inlay technique introduced. Characteristics and treatment of caries emphasized.
322. *Operative Dentistry 2*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Preparation is made for entering clinical activity. Certain fundamentals of pedodontics introduced.
329. *Operative Dentistry 3*. I. 2 hr. Initiation of clinical practice with comprehensive examinations and treatment planning of assigned patients. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.
348. *Operative Dentistry 4*. Yr. and S. 3 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Clinical practice is expanded, and includes a significant number of gold restorations.
358. *Operative Dentistry 5*. Yr. and S. 3 hr. More complex and advanced techniques for clinical practice and new developments throughout the scope of operative dentistry. Clinical practice expanded to provide experience in all classifications of restorative procedures.
383. *Operative Dentistry 6*. I and II. 2-4 hr. Clinical experience course in which additional cases are treated to improve upon efficiency and finesse. Sufficient variety and depth of experience is obtained to reach adequate competence for independent practice of operative dentistry.

397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Oral Diagnosis and Radiology

Professors Graham (*Chairperson*) and Thomas; Assistant Professors Bowers, Pifer, and H. Smith; Assistant Professor Fotos.

303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive health care.
323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.
327. *Oral Radiology*. I. Yr. and S. 1 hr. Physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
337. *Oral Diagnosis I*. Yr. and S. 2 hr. Didactic instruction with further application of diagnosis procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
364. *Oral Diagnosis 2*. Yr. and S. 1 hr. Clinical application of principles presented in Dent. 337.
367. *Clinical Oral Radiology I*. Yr. and S. 1 hr. Clinical application of principles presented in Dent. 303 and 327.
387. *Oral Diagnosis 3*. I and II. 1-2 hr. Continued clinical experience providing opportunities for further independent observation and analysis of clinical problems.
396. *Clinical Oral Radiology 2*. I and II. 1-2 hr. Additional clinical experience in oral roentgenology.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Oral Pathology

Associate Professors Bouquot (*Chairperson*) and Keyes; Instructor Gnepp.

338. *Oral Pathology I*. (For dental students.) II. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
353. *Oral Pathology II*. (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Continuation of Dent. 338.
355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
382. *Oral Histopathology Conference*. (For graduate and dental students.) I, II. 1-2 hr. PR: Consent. Advanced study of the microscopic aspects of oral and paraoral disease through weekly seminars with emphasis placed on diagnosis.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
401. *Advanced Oral Pathology*. (For dental and graduate students, residents, and interns.) I, II, S. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

## Oral Surgery

Professor Campbell (Emeritus); Professor Graves (*Chairperson*); Associate Professors Davidson and Fogarty; Assistant Professors King, Oliverio, Van Sickels, and Wilson.

- 300. *Anesthesiology*. II and S. 1 hr. Introduction to general anesthesia; lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.
- 339. *Oral Surgery 1*. II and S. 2 hr. Didactic instruction and clinical experience in basic surgical principles as applied to the extraction of teeth, including classification and techniques for the surgical removal of impactions.
- 359. *Oral Surgery 2*. Yr. and S. 3 hr. PR: Consent. Didactic instruction in diagnosis and surgical and adjunctive treatment of diseases, injuries, and defects of human jaws and associated structures. Practical training obtained by assignments in the oral surgery clinic and in University Hospital.
- 384. *Oral Surgery 3*. I and II. 2-4 hr. Continuation course in oral surgical procedures including additional experience in the hospital environment.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
- 400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations and clinical applications.

## Orthodontics

Professor Merow (*Chairperson*); Associate Professor Moore; Clinical Associate Professor Bonello; Assistant Professors Dempsey, H. E. Martin, Tatich, Valentine, and Wilfong; Visiting Lecturers Caveney, Eckley, Jarrett, and Schindler.

- 345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
- 346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
- 365. *Clinical Orthodontics 1*. Yr. and S. 2 hr. Case analysis, treatment planning, clinical practice, and seminars concerning interceptive, preventive, and adjunctive treatment of malocclusions.
- 385. *Clinical Orthodontics 2*. I and II. 1-2 hr. Continuing clinical management of selected malocclusion problems.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Pedodontics

Professor Nash (*Chairperson*); Associate Professors Fenton and Gwynn; Assistant Professor Bassin; Instructors McGregor and Nicholson.

- 335. *Pedodontics 1*. I and II. 2 hr. PR: Consent. Didactic instruction foundational to the dental care to children presented in the following modules of instruction: growth and development, behavior management, oral diagnosis/treatment planning/case presentation, prevention, restorative dentistry, pulpal therapy, management of the development occlusion and trauma to the dentition and oral structures.
- 361. *Pedodontics 2*. II. 1 hr. PR: Consent. Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: treatment planning considerations and applications, abnormal dental development, oral habits, and dental care for handicapped children.



386. *Pedodontics 3*. I, II, S. 1-5 hr. Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Periodontics

Professor Morrison (*Chairperson*); Assistant Professors Hornbrook and Wanker; Instructors Oliver and Stacy; Visiting Lecturer Crout.

311. *Periodontics 1*. S. 1 hr. Histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis and treatment planning. Laboratory instruction on correct periodontal instrumentation.
340. *Periodontics 2*. Yr. and S. 3 hr. Didactic and clinical instruction on diagnosis and treatment of periodontal diseases, including occlusion and selective grinding techniques.
363. *Periodontics 3*. Yr. and S. 2 hr. Didactic and clinical instruction correlating periodontics with all other areas of dentistry with continued clinical diagnosis and treatment of periodontal diseases.
377. *Periodontics 4*. I and II. 1-2 hr. Continued and additional clinical experience in clinical diagnosis and treatment of periodontal disease.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Fixed Prosthodontics

Professors Adams (Emeritus), Bianco (*Chairperson*), and Tucker; Associate Professors Connor and Kwiatkowski; Instructors Bramble, Crowder, and Smith; Visiting Lecturer Simpson.

314. *Fixed Prosthodontics 1*. S. 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
336. *Fixed Prosthodontics 2*. Yr. 5 hr. Lectures and laboratory exercises on principles and technics of crown and bridge prosthodontics. Types of dental bridges, their indications, and contraindications.
357. *Fixed Prosthodontics 3*. Yr. and S. Lectures and procedures employed in clinical practice. Types of dental bridges, their indications, and contraindications.
389. *Fixed Prosthodontics 4*. I and II. 2-4 hr. Clinical practice of crown and bridge prosthodontics. Emphasis on problems related to diagnosis and construction of more complex dental bridges.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Maxillofacial Prosthodontics

Professor Bianco (*Chairperson*); Associate Professor Kluth; Assistant Professor Lee.

397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

Removable Prosthodontics

- Professors Bianco (*Chairperson*) and DeCounter; Assistant Professors Harper, Queen, Roth, and VanRiper; Instructors Beaumont, Camele, and Lacy; Visiting Lecturer DiNapoli.
- 313. *Removable Prosthodontics 1.* I. 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.
  - 316. *Removable Prosthodontics 2.* S. 1 hr. Lectures and laboratory practice in maxillo-mandibular relationships and occlusion.
  - 334. *Removable Prosthodontics 3.* Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.
  - 341. *Removable Prosthodontics 4.* S. 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.
  - 350. *Removable Prosthodontics 5.* Yr. and S. 4 hr. Lectures and general clinical practice in complete and partial removable prostheses.
  - 376. *Removable Prosthodontics 6.* I and II. 2-4 hr. Continued clinical practice in various and special removable prosthodontic procedures.
  - 397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

Advanced Education Programs

The School of Dentistry offers advanced education programs. The Department of Endodontics and the Department of Orthodontics offer programs of advanced study leading to the degrees of Master of Science. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Pharmacology and Toxicology, and Physiology. (See pages 34-48 of this *Catalog* or the *WVU Graduate School Catalog.* ) The Department of Oral Surgery offers one oral surgery internship and two residencies. Four general practice residencies also are offered by the School of Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Advanced Education Programs.

Endodontic Program

Master of Science

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry and is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be processed in the School of Dentistry and will be recommended to the Graduate School for admission. Applicants approved for admission to the program will be notified soon after January 15.

Requirements for Admission to the Endodontic Program

- 1. Graduation from an accredited school of dentistry.
- 2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
- 3. Each applicant must file with the Department of Endodontics all information requested in the departmental application form.

## Requirements for Master of Science Degree

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to endodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 57 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (7 hours).
6. Must have demonstrated satisfactory clinical competency in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## Dentistry (Dent.)

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

## Endodontics (Dent.)

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: Ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 1 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
490. *Endodontic Teaching*. S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.
497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

## Microbiology (M. Bio.)

310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR: Consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. (Students can enroll for one to three parts.)
311. *Principles of Infection and Resistance*. I. 1-5 hr. PR: Consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students can enroll for one to three parts.)

## Pathology (Path.)

382. *Advanced Oral Histopathology*. I, II. 1-2 hr. PR: Consent. Microscopic study of head and neck lesions.
401. *Advanced Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

## Pharmacology and Toxicology (Pcol.)

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.



## Statistics (Stat.)

311. *Statistical Methods I, I, II*. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv. to Ed. P. 311 and Psych. 311.)

## Orthodontic Program

### Master of Science

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of 24 months (two academic years and two summers) of full-time residency in the School of Dentistry, and is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be recommended to the Graduate School for admission. Those applicants approved for admission to the program will be notified soon after January 15.

### Requirements for Admission to the Orthodontic Program

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the department all information requested in the department application form.

### Requirements for Master of Science Degree

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summers) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 50 credit hours. These include 35 hours of orthodontic courses, a minimum of 9 hours of selected basic sciences subjects, a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## Anatomy (Anat.)

315. *Craniofacial Osteology and Myology*. I. 3 hr. PR: Dental, medical, or graduate student standing or consent. Study of craniofacial embryology, morphology, and physiology, with special emphasis on articulations and their clinical applications.

## Orthodontics (Dent.)

316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: Anat. 315 or consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.
416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.

419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
420. *Cephalometrics*. I, II, S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
423. *Growth and Development*. I, II, S. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
497. *Research*. I, II, S. 1-15 hr.

### Pathology (Path.)

401. *Advanced Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar of independent study of local and/or systemic disease processes affecting oral and facial structures.

### Statistics (Stat.)

311. *Statistical Methods I*. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chisquare distributions, analysis of variance and multiple comparisons. (*Equiv. to Ed. P. 311 and Psych. 311.*)

## Dental Hygiene Program

The Dental Hygiene Program is a department of the School of Dentistry. The four-year dental hygiene curriculum combines the advantages of both a liberal arts and a professional education. This curriculum format has departed from the conventional, but there is a definite conviction that the inclusion of many disciplines provides greater strength to the program. The educational objectives of the Dental Hygiene Program are:

To prepare individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers of those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States. Presently, these services include: observation, recording, prevention, treatment, education, and communication.

To prepare individuals capable of performing the clinical skills delegated to any dental auxiliary (excluding the dental laboratory technician).

To prepare dental hygienists to teach clinical skills and to present didactic information in dental auxiliary education programs.

To prepare individuals capable of performing coordinative and administrative functions in public health and community related areas.

To prepare individuals for the dental hygiene profession who have a keen sense of social awareness and professional responsibility.

To prepare dental hygienists to continue their professional development past graduation through formal training, self-study, and independent thought.

To prepare individuals who have the capability to understand and adapt to new developments and changes in the scientific, sociologic, and practical factors pertaining to health.

To provide the educational foundation for higher education.

Upon completion of all requirements and with the recommendation of the School of Dentistry, the candidate is awarded a bachelor of science degree in Dental Hygiene.

The Dental Hygiene curriculum is structured in accordance with the standards specified for a Dental Hygiene Program by the Commission on Accreditation of the American Dental Association. The program has been fully accredited by this organization since 1965.

## Admission

Students enter dental hygiene as freshmen, and the general admission policies of West Virginia University are followed. The applicant must be a graduate of an accredited high school or preparatory school and have completed one unit of algebra, one unit of geometry, four units of English, biology, and chemistry. Good grades are expected, and applicants should rank in the upper one-third of their graduating class. Particular attention is given to academic achievement in science courses.

The American College Testing Program (ACT) examination is required of high school applicants. A high school counselor can supply information concerning this examination. The Dental Hygiene Aptitude Test is required of every applicant. A brochure with detailed information and instructions about this test is mailed with application materials or may be obtained by writing the American Dental Hygienists' Association, 211 East Chicago Ave., Chicago, IL 60611.

In addition to a special application form for dental hygiene, each candidate for admission is supplied with three standardized reference forms. Each applicant is requested to have these individuals return the forms directly to the Department of Dental Hygiene.

The personal qualifications, scholastic record, test scores, and recommendation of each applicant are reviewed by the Dental Hygiene Admissions Committee. After reviewing these credentials, the committee will request an interview with those applicants who are most qualified. The applicant will be notified by letter of the date, time, and place of the interview.

The competition for entrance into dental hygiene is extremely keen. *Nonresidents should recognize that preference is given to West Virginia residents. Only those nonresidents with the highest qualifications will be considered.*

For application materials the applicant should write to the Department of Dental Hygiene, West Virginia University, or the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. Applicants should apply and complete aptitude tests as early as possible in the year preceding the year admission is desired. Applications are available in September and are not accepted after March 1.

## Promotion

At the end of each semester, the status of each dental hygiene student is reviewed by the Dental Hygiene Committee on Academic Standards. This committee then makes recommendations to the Dean. Final disposition in each case is the prerogative of the Dean and the Chairperson of Dental Hygiene.

Unconditional promotion normally depends upon fulfillment of all course requirements and the attainment of both a minimum cumulative grade-point average and a minimum science-dental hygiene grade-point average. These minimum grade-point averages are: a 1.50 for promotion to the second year; a 1.75 for promotion to the



third year; a 2.0 for promotion to the fourth year; and a 2.0 for graduation. The courses (or equivalents) utilized to calculate the science-dental hygiene grade-point average are:

Chemistry 11	Dental Hygiene 1	Dental Hygiene 154
Chemistry 12	Dental Hygiene 2	Dental Hygiene 155
Anatomy 101	Dental Hygiene 66	Dental Hygiene 168
Pathology 128	Dental Hygiene 85	Dental Hygiene 169
Pathology 129	Dental Hygiene 90	Dental Hygiene 172
Microbiology 26	Dental Hygiene 105	Dental Hygiene 174
Physiology 141	Dental Hygiene 120	Dental Hygiene 202
Pharmacology 160	Dental Hygiene 125	Dental Hygiene 205
Anesthesiology 300	Dental Hygiene 150	Dental Hygiene 206
	Dental Hygiene 152	

Students who do not qualify to be promoted unconditionally may be placed on probation or may be suspended from further studies in the Department of Dental Hygiene. Probationary status implies that the student will be allowed to make up deficiencies or be given an opportunity to repeat a year.

If a student is promoted on probation, the student must reach the required minimum standards specified above. Students on probation who do not obtain these standards will be reevaluated by the committee.

The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Professional Organizations

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of student membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

*American Association of Dental Schools*. This association of dental educational institutions and faculties has as its primary purpose to promote and improve dental education. Dental hygiene students may join as student members.

*West Virginia University School of Dentistry Alumni Association*. Graduates of the Department of Dental Hygiene may join and participate in all activities of the Alumni Association.

## Courses of Instruction in Dental Hygiene

Associate Professor Komives (*Chairperson*), Kaplan, and Sherrill; Assistant Professors DeBiase, Fotos, Graves, and Krouse; Instructors McLellan (part-time) and Miner; Adjunct Clinical Instructor Stuart; School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this *Catalog* or the *WVU Undergraduate Catalog*.)

### Dental Hygiene (Dnt. Hy.)

1. *Orientation to Dental Hygiene*. I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
2. *Introduction to the Dental Specialties*. II. 3 hr. PR: Dnt. Hy. 1 or consent. Survey of functions and responsibilities of each of the dental specialties. Emphasis on the role of the dental assistant and dental hygienist in each type of practice.

# DENTAL HYGIENE CURRICULUM PLAN

First Year				Second Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Engl. 1	3	Engl. 2	3	Anat. 101	4	Physi. 141	4
P.E. 1	1	P.E. 2	1	Path. 128	2	Path. 129	3
Core A		Chem. 12	4	Dnt. Hy. 105	2	Pcol. 160	3
(Spch. 11 & 12)	3	Dnt. Hy. 2	3	Nutrn. 71	3	Dnt. Hy. 120	1
Biol. 2	4	Dnt. Hy. 85	3	Ed. P. 105	3	Dnt. Hy. 125	4
Chem. 11	4	Dnt. Hy. 90	3	M. Bio. 26	4	Core B	
Dnt. Hy. 1	2					(Soc.&A. 1)	3
Dnt. Hy. 66	1						
	18		18		18		18
Third Year				Fourth Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Dnt. Hy. 168	1	Dnt. Hy. 169	1	Dnt. Hy. 202	2	Dnt. Hy. 206	2-4
Core A (Elective)	3	Dnt. Hy. 174	2	Dnt. Hy. 205	6	Electives	
Core B (Psych. 1)	3	Core B	3	Core B		Maximum	15
Dnt. Hy. 152	2	(Psych. 141 or 164)		(Upper Division		Minimum	12
Anes. 300	1	Core A (Electives)	6	Soc.&A.)	3		
Dnt. Hy. 172	2	Dnt. Hy. 150	2	Electives			
Dnt. Hy. 155*		Dnt. Hy. 155*		Maximum	7		
Dnt. Hy. 154*		Dnt. Hy. 154*		Minimum	4		
					15-18		14-18

\*Year courses: Dnt. Hy. 155—6 credit hours; Dnt. Hy. 154—4 credit hours.

66. *Technical Expression and Dental Literature*. I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.
85. *Oral Anatomy*. II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.
90. *Oral Histology*. II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention*. I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education*. II. 2 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.
154. *Clinical Dental Hygiene*. I, II. 4 hr. PR: Dnt. Hy. 125. Lectures and clinical application of dental hygiene principles and technics.
155. *Expanded Functions*. I, II. 6 hr. PR: Enrollment in dental hygiene. Lecture, laboratory, and clinical course covering the materials and technics of restorative dentistry and expanded duties for the dental hygienist.
168. *Periodontics*. I. 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.

169. *Periodontics*. II. 1 hr. PR: Dnt. Hy. 168. A sequential course to Dnt. Hy. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health*. I. 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
205. *Advanced Clinical Dental Hygiene*. I. 5-6 hr. PR: Senior enrollment in dental hygiene. Role of the dental hygienist in an orthodontic practice, pre- and post-operative care of surgical patients, and introduction to research. Students gain clinical experience in both traditional and expanded duties of the dental hygienist.
206. *Advanced Clinical Dental Hygiene*. II. 2-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.
220. *Special Topics in Dental Hygiene*. I, II. 1-22 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.



# School of Medicine

The School of Medicine began as the College of Medicine in 1902. For ten years this program was affiliated with the College of Physicians and Surgeons of Baltimore, Md. In 1912 the School of Medicine had its formal beginning as an independent school offering the first two years of the medical curriculum. The School of Medicine moved from the Downtown Campus to the Medical Center in 1957 and inaugurated a four-year program in 1960. This coincided with the opening of University Hospital. In 1961, the first M.D. degrees were awarded to 15 students.

In 1945 the School of Medicine established a curriculum in Medical Technology leading to a degree of bachelor of science. The first graduates were awarded a combined degree by the College of Arts and Sciences and the School of Medicine in 1947. The Program of Medical Technology was established in the School of Medicine in 1961. The division of Physical Therapy was established and accepted its first class of 16 students in 1970. The division offers the final two years of a baccalaureate program leading to a degree in physical therapy.

West Virginia University Medical Center—Charleston Division was established in October, 1972, with the affiliation of WVU and the Charleston Area Medical Center. The Charleston Division offers programs for third and fourth-year medical students in a variety of required and elective courses.

West Virginia University School of Medicine—Wheeling Division was established in 1974. This program is available for many elective opportunities for students in the fourth year.

## Committees

*Academic Standards:* Charles R. Craig, *Chairperson.*

*Biomedical Research Support:* Thomas J. Tarnay, *Chairperson.*

*Dean's Committee to Clarksburg VA Hospital:* John E. Jones, *Chairperson.*

*Curriculum Committee:* Gale W. Rafter, *Chairperson.*

*Executive Faculty:* John E. Jones, *Chairperson.*

*Educational Advisory:* John E. Jones, *Chairperson.*

*Faculty Promotion:* Ronica M. Kluge, *Chairperson.*

*Medical School-Hospital Liaison to Student Body:* John E. Jones, *Chairperson.*

*Student Admissions:* Morton H. Friedman, *Chairperson.*

*Student Financial Aid:* David Z. Morgan, *Chairperson.*

*E. J. VanLiere Student Research Convocation:* Wilbert E. Gladfelter, *Chairperson.*

*Outstanding Teachers:* Marta J. Henderson, *Chairperson.*

*Planning:* Stephen W. Carmichael, *Chairperson.*

*Continuing Medical Education:* Robert L. Smith, *Chairperson.*

*Intern Advisory:* David Z. Morgan, *Chairperson.*

*Admissions Committee for Medical Technology:* Ann W. Sharpe, *Chairperson.*

*Admissions Committee for Physical Therapy:* Charles Meacci, *Chairperson.*

## Degree

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Combined M.D.-Ph.D. Program

This should be considered only by students who have shown exceptional interest and promise. All of the admission requirements of the School of Medicine and the Graduate School will apply. Specific course requirements and procedures for monitoring progress will be detailed by both schools.

## Admissions

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants who have ties to the state of West Virginia will also be considered. Careful consideration is given to those personal qualifications which bear upon fitness of the applicants for the study and practice of the profession.

### When to Apply for Admission

Application for admission in August, 1982, should be made beginning June 1, upon completion of the 1980-81 school year. The latest date for filing an application is November 30, 1981. It is desirable for applicants to file early and to make certain that New Medical College Admission Test scores, current transcripts, and letters of recommendation are available to the Committee on Admissions.

### College Credit Required

The applicant should present a broad general education including a major in some field, not necessarily a natural science. The Admissions Committee needs evidence of excellence of academic performance and steady progress toward a goal.

An excess of credit hours or higher degrees does little to offset the disadvantages of low grades in securing admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from the West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Committee on Admissions.

English.....	1 year
Biological Sciences (with laboratory) .....	1 year
Inorganic Chemistry (with laboratory).....	1 year
Organic Chemistry (with laboratory) .....	1 year
Physics (with laboratory) .....	1 year
Social or Behavioral Sciences .....	1 year

A total of 90 semester hours of work, exclusive of Military Science (ROTC) and Physical Education, is required.

It is recognized that applicants for medical school may have very diverse undergraduate backgrounds with a variety of majors. While many undergraduate courses, aside from the required prerequisites, might be beneficial in providing additional background for medical school, the choice of such courses should be determined by the academic strengths and weaknesses of the particular applicant.

### New Medical College Admission Test

The scores of the New Medical College Admission Test (New MCAT) are used by the Admissions Committee in considering an applicant for admission. For this reason, it is strongly recommended that students take the test in the Spring before making application for admission. Delaying the test until Fall, even though all science courses may not have been completed, jeopardizes an applicant's opportunity since no final consideration is given until New MCAT scores are obtained by the Admissions Committee. No applicant can be considered who delays taking the New MCAT until Spring of the year of expected entry. Information concerning the time and place of the test can be obtained from your premedical adviser or committee. The New Medical College Admission Test is required of all applicants.

## Personal Interview

No applicant is admitted without an interview by the Committee on Admissions. Currently, all residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Committee on Admissions. The applicant is notified of the time and place of the interview. Interviews and consideration of applicants begin in September.

## Conditions Following Acceptance

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Committee on Admissions.

It should also be apparent that furnishing or causing to be furnished false information for the purpose of the School of Medicine application constitutes grounds for disciplinary action, including but not limited to expulsion or revocation of the acceptance.

## Admission to Advanced Standing

Increasing numbers of inquiries are being received seeking consideration of enrollment in the WVU School of Medicine with advanced standing. Only a limited number of such requests can be processed. Transfer ordinarily will be considered only at the end of the second year. The applicant must have presented results of the Medical Science Knowledge Profile (MSKP) Test and must present certification of good standing in the school from which the student is transferring.

## Examinations and Evaluation of Student Progress

It is the policy of the School of Medicine that the several departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. A Satisfactory (S) or Unsatisfactory (U) designation is formally recorded for each course. In addition, each department files in the Office of the Dean a narrative evaluation of the work of each student identifying strengths and weaknesses and suggesting remedial or corrective measures, if appropriate.

In addition to departmental examinations, which help serve as a basis for recording grades in individual courses, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion. National Board of Medical Examiners, Part I, examinations are given as part of the testing of achievement in individual disciplines and are incorporated in the final grade for that course. The student is encouraged to take the complete Part I examination as a candidate for National Board certification near the end of the second year. The Part II examination is required as a comprehensive test in clinical science at the end of the third year and results are incorporated in the final grades for clinical clerkships.

The overall performance of the student on the National Boards will be taken into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners examination is one mechanism by which a license may be obtained.



## Promotions and Progress

The Committee on Academic Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

1. The Committee on Academic Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the committee, the student's overall performance does not meet the academic standards of the School of Medicine.

2. No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

3. All courses and all classes at the School of Medicine are graded as Satisfactory (S) or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The S and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

4. Readmission of a dismissed student is the prerogative of the Committee on Admissions after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic Standards.

5. All non-disciplinary matters are governed by the concept of academic due process.

6. Upon concurrent recommendation of the Committee on Admissions, the Committee on Academic Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

*In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.*

## Incomplete Courses

The grade of Incomplete (I) is given when the instructor believes the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure unless special permission to postpone the work is obtained from the Committee on Academic Standards (University rule.) It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses.

## Departure From Scheduled Work

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of

Medicine. This permission is not valid until it has been reported to the Assistant to the Dean of Admissions and Records, Medical Center, for record.

## Departure

Interruption of academic work must be approved by the Academic Standards Committee in its recommendation to the Dean except in urgent circumstances, such as for illness.

## Honor Code

Students in the School of Medicine agree to abide by the provision of an honor code which requires ethical and moral standards of conduct in all situations.

## Immunizations

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

## University Hospital and Outpatient Clinics

University Hospital and its outpatient clinics opened in the summer of 1960. It is dedicated to the education of students in the multiple disciplines of the health fields and to the advancement of knowledge in the sciences and arts concerned with health and illness.

Specialist services at University Hospital are provided through the staff of the clinical departments of the School of Medicine.

There are also facilities and staff for clinical laboratory service, diagnostic and therapeutic X-ray services, and such special examinations as electrocardiography, cardiac catheterization, and electroencephalography. Emergency facilities are available at all times.

## Organizations

Graduates of the School of Medicine have a *School of Medicine Alumni Association* devoted to the interests of students and graduates and to the encouragement of scientific and professional progress among its members and the medical profession generally.

*Student American Medical Association.* This organization has a chapter among the students of this school. An Auxiliary provides opportunities for student wives to meet and work together.

*Student National Medical Association.* This organization has among its objectives assistance in the recruitment and retention of minority students.

## Lectureships

*Alumni Lectureship.* Annually some outstanding physician is brought to the WVU Medical Center under School of Medicine Alumni Association sponsorship to address the student body.

*Gideon Stanhope Dodds Lectureship.* A periodic lectureship, founded by a group of alumni and friends, honors Dr. Dodds, late professor emeritus of histology and embryology.

# Curriculum Plan

## First and Second Years

The plan of study is directed toward the principles and methodology of the medical basic sciences. However, the basic courses are designed so that the student begins to integrate concepts of patient care.

The student has the opportunity of an additional early exposure to patient-oriented instruction through the introduction to physical diagnosis and community medicine in the first term of the freshman year.

With the recognition that entering medical students have a wide variety of interests and backgrounds, elective opportunities are offered in the basic science years, beginning with the second term of the freshman year. The permissible elective courses or plans of study have broad limits and need not be confined to the Medical Center. The intention is to encourage responsible student initiative.

See Medicine I and Medicine II charts for representative schedules.

## Third Year

A tightly-structured traditional third year gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students will spend part or all of the year in specified clerkships at the Charleston Division of the WVU Medical Center or other affiliated programs as designated by the faculty of the School of Medicine.

## Fourth Year

The fourth year is selective. The student chooses one of three "tracks" and works with advisers at each track to select the individual program. The general track is appropriate for: (1) the student pointing toward family practice, and (2) the student who has not selected a particular speciality interest.

The student chooses a specialty track by department, and may already recognize an attraction to a sub-specialty within that department. The research track offers opportunity to spend much of the fourth year in medical or biological research.

Sixteen of the 44 weeks must be spent in intramural programs. In addition to programs on the Morgantown campus, the programs at the Charleston Division—WVU Medical Center, qualify as intramural. A similar designation for specific programs is in development at the Wheeling Division—WVU School of Medicine and the Veterans Administration Hospital in Clarksburg. A folder is available that lists the approved intramural selective options.

A number of assigned fourth-year students will take all of their clerkships at the Charleston Division of the WVU Medical Center.

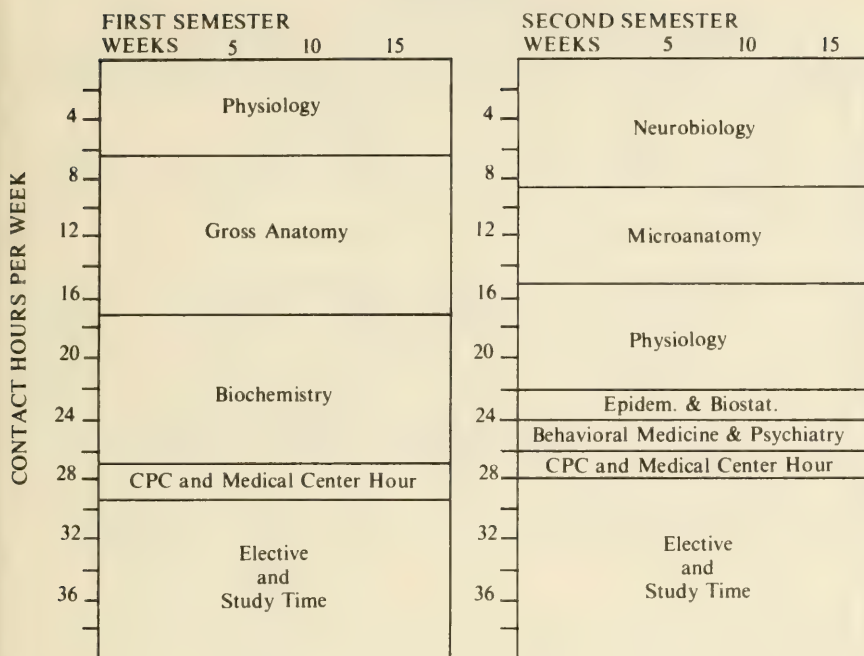
The Joint Council of Teaching Hospitals, working with physicians in various communities and the School of Medicine, has developed extramural selective opportunities at a number of hospitals in West Virginia. Alternatively, the selectives may be spent at a university or university-affiliated hospital.

Every student has the opportunity for 4 weeks of vacation. The student may choose valuable medical experience for vacation time.

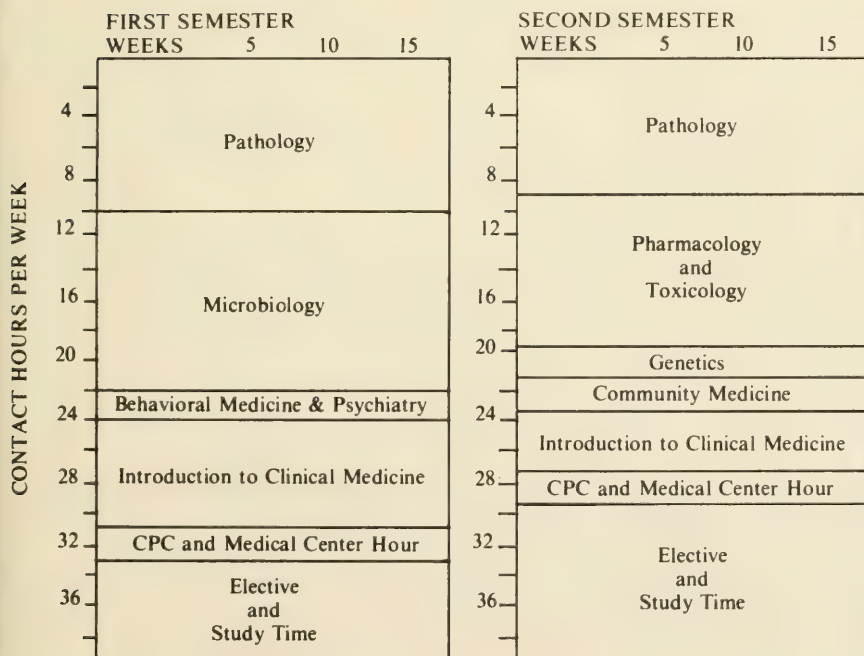
A separate booklet lists the extramural in-State electives and provides specific guidelines for the fourth-year curriculum.



## MEDICINE I



## MEDICINE II



# MEDICINE III

## Clerkships

WEEKS

12	Medicine
12	Surgery
12	Behavioral Medicine and Psychiatry
	Obstetrics and Gynecology
12	Pediatrics
	Neurology, Pediatrics OPD, Acute Medicine
48	TOTAL

**MEDICINE IV**  
Three Alternative Tracks

WEEKS	GENERAL	SPECIALTY	RESEARCH
4	Vacation	Vacation	Vacation
12	Special Selective Advisory Group Concurrence	Special Selective Department Chairperson Concurrence	Special Selective Advisory Group Concurrence
8	Clinical Neuro Sciences, Behavioral Medicine and Psychiatry, Radiology Ob Gyn or Pathology Including Clinical Pathology	Department Chairperson Approval	Advisory Group Approval
8	Medicine and or Pediatrics, Including Sub Specialty Units		
8	Surgery, Including Sub Specialty Units		
4	Acute and Ambulatory Care		
44	TOTAL		



## Courses of Instruction

### Anesthesiology (Anes.)

Professors Eller, Heironimus, Kennedy and Knapp (*Chairperson*); Associate Professors Koliner, Martinez, Rodman, and Smith; Assistant Professors Bettinger, David, Dedhia, Doshi, Graf, Poland, de Sanctis, and Zavisca; Instructor Schiebel; Clinical Professors Cwik, Reier, Weeks, and Zeedick; Clinical Associate Professor Tercan; Clinical Assistant Professors Bergman, Hall, Hovis, Kessell, Lilly, Thompson, and Westmoreland.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)
331. *Clinical Clerkship in Anesthesiology/Acute Medicine. (Third Year.)* CR.  
*A. Lectures to Third-Year Students on Topics Related to Anesthesiology.*  
*B. Clinical Clerkship in Acute Medicine.* Clinical clerks will receive instruction in preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology and toxicology, fluid and blood therapy, and pain management. Methods of instruction include seminars and practical exercises in emergency cardiac life support and clinical experience in the intensive care unit and the operating theatre. (Duration: 2 weeks.)
399. *Selective Experiences in Anesthesiology. (Fourth Year.)* CR. (See Conjoined Courses.)  
*A. Clinical Anesthesiology.* Participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)  
*B. Intensive and Respiratory Care.* Direct participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)
497. *Anesthesiology Research.* 1-15 hr. Participation in ongoing clinical laboratory projects including: The effects of benzodiazepine derivatives as premedicant, induction and amnesic agents for anesthesia; monitoring techniques in the critically ill; pathophysiology of the airway and lung; biochemical and ultra-structural studies of the metabolism of neurotransmitters from central and peripheral nerves; to learn research techniques; newer methods of physiological measurements in critically ill patients. Computer monitoring in intensive care. Duration: 4-24 weeks. Offered: By arrangement. Max. enrollment: 2.

### Behavioral Medicine and Psychiatry (B.M.)

Professors Carter, Flink, Hein, Kelley, Morgan, Quarrick, Stevenson (*Chairperson*), Waldman, and Watne; Associate Professors Clayman, Cone, Hlusko, Ingersoll, Linton, Morgan, Nelson, and Seime; Research Associate Professor Pawlicki; Assistant Professors Brailier, Claude, Clausell, Colvin, Dreyer, Ellis, Fonte, Hamilton, Kelley, Kommor, Lerfald, Miller, Orr, Puzzuoli, Robison, Settle, Walker, and Williams; Instructors Curry, Harms, Kent, Nash, and Wheeler; Clinical Professors Ayd, Bateman, Carruth, Crawford, Rossman, Schein, Staples, and Withersty; Clinical Associate Professors Baker, Comer, Edwards, Goodman, Hibbard, Kerns, Knapp, McCauley, Panepinto, Srebalus, Tinnin, Wanner, Ward, and Weiss; Clinical Assistant Professors Allen, Buck, Callahan, Capage, Davis, Dorsey, Dunning, Edelstein, Fawley, Ferguson, Fink, Hill, Hoback, Hutton, Inger, Kovacevich, Ledwell, McNeer, McSweeney, Morgan, Naviaux, Panepinto, Pittman, Portz, Settle, Sine, D. Smith, L. Smith, R. Smith, Stein, Webb, and Zarski; Clinical Instructors Case, Goldberg, Hunter, and Starkey; Adjunct Professor Levine; Adjunct Associate Professor Elkins.

311. *Introductory Psychiatry. (First Year.)* 1 hr. Clinical syndromes with discussion of various patterns and defense mechanisms.
321. *Introductory Psychiatry. (Second Year.)* 2 hr. Developmental, interpersonal, and intrapsychic aspects of distorted behavior patterns.

341. *Clinical Clerkship in Psychiatry. (Third Year.)* CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry and participation in diagnosis and treatment of psychiatric disorders.
355. *Behavioral Science and Health Care.* Behavioral science applied to issues related to physical and mental health care. Variety of topics will be considered, such as study of interpersonal roles and games, various cultural "healing" practices, personal and social aspects of illness, family disorganization, and hospitals and related institutions.
399. *Selected Experiences in Behavioral Medicine and Psychiatry. (Fourth Year.)* (See Conjoined Courses.)

## Community Medicine (C. Med.)

Professors Pearson (*Chairperson*), Krall, and Mou; Clinical Professors Pickett and Staples; Associate Professors Hall and Smith; Clinical Associate Professors Arnwine, Cooley, McCoy, and Wiles; Adjunct Associate Professors Carlton, Holland, Merchant and Reger; Assistant Professors Bosanac, Garland, Murray, and Wyant; Clinical Assistant Professor Hinton; Adjunct Assistant Professors Atfield, Bernstein, Brough, Carlson, Greenwood, Harper, and Ortmeyer; Clinical Instructor Patton; Adjunct Instructors Castellan and Koczynski.

171. *Biostatistics for Health Sciences.* (For physical therapy, medical technology, nursing, or dental hygiene majors only.) I. 1 hr. PR: Stat. 101 or equiv. Application of basic concepts of probability and statistics to the health sciences.
311. *Methods of Biostatistics.* I. 3 hr. PR: Math. 3. Basic concepts of statistical models, distributions, probability, random variables, test of hypotheses, confidence intervals, regression, correlation, F and  $\chi^2$  distributions, analysis of variance with emphasis on methods of biostatistics. (*Equiv. to Stat. 311.*)
312. *Community Medicine. (Second Year.)* II. 2 hr. Open to limited number of graduate students. PR: Consent. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental and occupational factors. The organization of public health and medical care.
322. *Epidemiology and Biostatistics. (First Year.)* II. 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.

## Conjoined Courses (CC MD)

399. *Selective Experiences in Medicine. (Fourth Year.)* I, II, S. CR. PR: Satisfactory completion of first three years of the medical curriculum. (Graded as S or U.) The selective program offers a wide range of opportunities in the basic sciences, medical specialties, and subspecialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the WVU Medical Center—Charleston Division, WVU School of Medicine—Wheeling Division, and the Veteran's Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans an individual program, with faculty advice. Flexibility is permitted. With consent of instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See the intramural and extramural brochure, published annually, describing the selective opportunities.)

## Family Practice

Professors Traubert (*Chairperson*), Carper, Pearson, and Vazquez; Professor Emeritus Sleeth; Associate Professor Weissler; Assistant Professors Arbogast, Nesselrode, Palmer, Ponte, and Swan; Clinical Professors Davis, Flood, Jarrett, and Simmons; Clinical Associate Professors Brooks, Fullmer, Hess, Kellas, Mangus, Newman, Rashid, and Sinclair; Clinical Assistant Professors Burke, Crigger, Dickey, Eckmann, Hinton, Hofreuter, Lewis, Patton, Reed, Ritz,

Sine, and Stemple; Adjunct Assistant Professor Svoboda; Clinical Instructors Clark, Harris, Hayes, McNeill, Roberts, and Wack; Nurse Clinician Nath; Patient Educator Murray.

399. *Selected Experiences in Family Practice. (Fourth Year.)* (See Conjoined Courses.)

## Medicine (Med.)

Professor Emeritus Sleeth; Professors Waldman (*Chairperson*), M. Albrink, Andrews (*Vice-President*), Flink, Jain, J. Jones (*Dean*), Kluge (*Chief, Infectious Diseases Section*), Lapp (*Chief, Pulmonary Disease Section*), McIntosh, Manier (*Chief, Gastroenterology Section*), D. Z. Morgan (*Associate Dean*), Mou (*Dean, Charleston Division*), Ortel, W. Point (*Assistant Chairperson*), Raich (*Chief, Hematology/Oncology Section*), Shane (*Chief, Metabolism/Endocrinology Section, Associate Chairperson*), Stevenson (*Chief, Behavioral Medicine Section*), and Welton (*Chief, Dermatology Section*); Associate Professors Bekheit, Crouch, DiBartolomeo (*Chief, Rheumatology Section*), Ganguly, Georgiev, Khakoo, Koller, Milutinovic (*Chief, Nephrology Section*), E. Morgan, W. Nelson, Renn, Rogers, Shultz (*Chief of Medicine, Wheeling Division*), and Ullrich; Adjunct Associate Professor Merchant; Assistant Professors Blessing, Brestel, Colvin, D'Alessandri (*Chief, Comprehensive Medicine Section*), Dedhia, Fisher, Fontana, Grubb, Hoover, D. Jones, Jubelirer, Knost, R. Martin, Morise, O'Keefe, Orr, Powers, Robinson, Spital, Subramanian, Sweeney, Thrush (*Chief, Allergy and Clinical Immunology Section*), Walker, and Wurtzbacher; Adjunct Assistant Professors Dorn and Hodous; Instructor Blehschmidt; Adjunct Instructors Abrons, Banks, Castellán, and Peterson; Clinical Professors Emeriti Blatchley, Johnson, Pushkin, and Tuckwiller; Clinical Professors Carter, Gaziano, Lewis, McMillan, Marshall, Pfister, Reiter, Saville, Selinger, and Skaggs; Clinical Associate Professors W. T. Anderson, Artz, Avington, Chvasta, Conley, Hartman, Jackson, Koppel, Latos, D. Lee, Lynch, McCabe, Nestman, R. Point, Revercomb, Santer, Scobbo, Valentine, and S. Warren; Clinical Assistant Professors Arnett, Avashia, Basu, Byrd, Eskwith, Farmer, Gainer, Glick, Gustke, Hall, Horsman, Houtston, McConnell, McJunkin, MacCallum, Masilamani, Mazzocco, Noble, Palmer, Parsons, Patel, Rectenwald, Rhudy, Shafi, Vasquez, C. Warren, and Zaldivar; Clinical Instructors Gomez, A. Lee, Lim, McCagh, and Spiggle.

321. *Physical Diagnosis—An Introduction to Clinical Medicine. (Second Year.)* Yr. 4-hr. PR: Consent. Examination of normal subjects. Practical experience in history-taking and physical examination of patients.

331. *Clinical Clerkship in Medicine. (Third Year.)* CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the several departments. Clerkship in medicine occupies 12 weeks.

399. *Selected Experiences in Medicine. (Fourth Year.)* CR. (See Conjoined Courses.)

## Neurological Surgery

Professors Nugent (*Chairperson*), Fox, and Dunker.

399. *Selective Experiences in Neurological Surgery (Fourth Year.)* (See Conjoined Courses.)





neg 291 Sp. Topics  
1982-83

Course Title:

Neonatal Nursing

Instructor:

Karen Miles, Associate Professor, WVU School of Nursing

General Information:

This course will use the Personalized System of Instruction (PSI) as a teaching-learning method to help you master the basic concepts of Neonatal Nursing. Unit I contains an introduction to PSI and describes some of the specific features of this particular course.

There are 12 units in this course. The topics for the units are listed on a separate page. The course is one semester in length. In order to use the self-paced feature to its fullest you should plan to complete, at least, one unit a week. However, you may elect to complete more than one unit a week. The final exam may be taken anytime after you have successfully mastered the 12 units. However, all students must take the final exam on or before the last day of class.

Proctoring will be on a voluntary basis in this course. Those of you who advance at a rapid pace in the course may serve as proctors. The instructor will ask for volunteers who can be available from 2 p.m. to 4 p.m. on Mondays.\* One other 2 hour block of time will be identified during orientation that will be available during the week for test taking.

Lectures will be given periodically during the semester. These will

to attend on Monday, 2 p.m. to 3 p.m. A class schedule will be available the first week of classes.

It makes little sense in this kind of course to take the course "Pass-Fail"; and I urge you to take the course for a grade. Completion of the course virtually assures an "A" grade.

This course includes a clinical component. One credit hour is allotted to clinical experience. Therefore, you need to plan for approximately 60 hours of clinical experience over the semester. The clinical experience will be in the Neonatal Intensive Care Unit or the Neonatal Step Down Unit at West Virginia University Medical Center. Scheduling of clinical experience will be done on a one-to-one basis with the instructor. All students will be required to write their own clinical objectives for this experience.

\* Proctors will assist with the grading of quizzes, check answers to study questions, and clarify instructions.





## Neurology (Neuro.)

Professors Gutmann (*Chairperson*), Gutrecht, and Martin; Associate Professors Azzaro, Crosby, Fakadej, and Svoboda; Clinical Professor Poffenbarger; Clinical Assistant Professors Kettler, Louden, Morgan, and Pratt.

341. *Clinical Clerkship in Neurology. (Third Year.)* CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.
399. *Selected Experiences in Neurology. (Fourth Year.)* CR. (See Conjoined Courses.)

## Obstetrics and Gynecology (Obst.)

Professors Butcher and McIntosh; Associate Professors Cox (*Acting Chairperson*), Durkin, and Sehgal; Assistant Professors Foss and Ashraf; Instructor Dix; Clinical Professors Bonney, Chambers, and Patchell; Clinical Associate Professors Behnam, Giustini, Grubb, Mairs, Maxson, Pak, Palladino, Poole, Stone, and Williams; Clinical Assistant Professors Battaglini, Curnutte, D. Georgiev, Keefer, McKinley, Sandhu, Sims, Stevens, Tomhave, and Withersty; Clinical Instructor Berry.

341. *Clinical Clerkship in Obstetrics and Gynecology. (Required of third-year medical students.)* Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students are involved with care of all patients, participating in an essential role in patient care. Experience extends to outpatient clinics in all aspects of obstetrics and gynecology.
399. *Selected Experiences in Obstetrics and Gynecology. (Fourth Year.)* An elective subinternship in obstetrics and gynecology with major responsibility for patient care beyond that provided during the third-year curriculum. Students participate in outpatient and inpatient care with delegation of responsibility commensurate with level of training and ability. Supervision is provided by house officers and faculty. Greater participation in surgical procedures is provided, as well as active participation in complicated obstetrical patients.

## Ophthalmology (Ophthal.)

Professors Weinstein (*Chairperson*) and Colasanti; Assistant Professor Raju; Clinical Associate Professors Hamrick, Magee, O'Conner, and Winkler; Clinical Assistant Professors Park, Rashid, Strickland, and Toma; Clinical Instructors Genin and Linger.

399. *Selected Experiences in Ophthalmology. (Fourth Year.)* (See Conjoined Courses.)

## Orthopedic Surgery (Orth. Surg.)

Professor Radin (*Chairperson*); Professor Emeritus Pickett; Clinical Associate Professors Bowers, Davis, Miller, and Wiley; Assistant Professors Blaha, Jones, and Labosky; Clinical Assistant Professors Stemple and Stoll.

399. *Selected Experiences in Orthopedic Surgery. (Fourth Year.)* (See Conjoined Courses.)

## Otolaryngology (Otolaryn.)

Professors Sprinkle (*Chairperson*) and Veltri; Associate Professors Cody and Lass; Clinical Professor Emeritus S. Hall; Clinical Associate Professors Bryant, Cather, T. F. Hall, Jaquiss, Kamerer, Lim, Malone, Mathias, Morgan, Oliverio, Paine, and Spencer; Clinical Assistant Professors Azar, Bland, Cipicic, Dodd, Haislip, Hatfield, Holt, Nichols, Snider, Sporck, Touma,

Wade, Whitaker, and Wilkinson; Clinical Assistant Professors Bodenhemier and Tekieli; Clinical Instructors Alt, Curiel, Fitzpatrick, Laniham, McCabe, and Stronach; Adjunct Instructor R. Anderson; Research Associate Maxim.

399. *Selected Experiences in Otolaryngology. (Fourth Year.)* (See Conjoined Courses.)

## Pediatrics (Pedia.)

Professors Klingberg (*Chairperson*), B. Jones (*Associate Chairperson*), Kelley, and Pomerance; Associate Professors Amato, S. Edwards, Fakadej, Neal (*Chairperson*, Pediatric Cardiology), Phillips, Ross, Svoboda, Tenney, and Wible; Assistant Professors Anderson, Dworkin, Mullett, and Myerberg; Instructor Sutherland; Clinical Professors Harrison, Potterfield, and Stabins; Clinical Associate Professors Jakubec, Leslie, Lewine, and Morris; Clinical Assistant Professors Ayoubi, Burech, Hoylman-Ayoubi, Israel, Lambrechts, Morgan, Rhee, Shawkey, Staab, and Wolf; Clinical Instructors Majumder, Thatcher, Uy, and Verma.

331. *Clinical Clerkship in Pediatrics. (Third Year.)* CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.

370. *Genetics. (Second Year.)* Introduction to the understanding of genetics and heritable diseases in man.

399. *Selected Experiences in Pediatrics. (Fourth Year.)* (See Conjoined Courses.)

## Radiology (Radiol.)

Professors Gabriele (*Chairperson*) and Frich; Associate Professors Agha, Barger, Elyaderani, Hogan, Horton, and Lai; Assistant Professors Cardo, Chang, Chen, Goodwin, Jain, Kim, and Raji; Instructor Dorn; Clinical Professors Butler, Castro, and Kennard; Clinical Associate Professors Antico, Arbitman, Ellswood, Goodwin, Haslem, Sexton, Szalontay, and Wilder; Clinical Assistant Professors Abdalla, Cossrow, Dillow, Hayes, Hung, King, Ko, Koh, Kunst, Leef, Nagaraban, Noble, Patterson, Rosenblatt, Smith, Stupar, Tanguilig, Wheatly, Williams, Wymer, and Yost.

The radiology staff aids in the instruction of students at all levels of the curriculum. They assist in the teaching of topographic anatomy in the first year. The careful interpretation of roentgenograms is an integral part of each clinical service.

101. *Radiology.* Selected experiences in general radiology.

102. *Neuroradiology.* Review of neuroanatomy with respect to application in neuroradiology. Selected experiences in neuroradiology.

103. *Cardiovascular Radiology.* Review of anatomy and embryology. Selected experiences in central and peripheral vascular radiology.

104. *Radiologic Physics.* Application of physics and mathematics to radiology, nuclear medicine, and radiation therapy.

399. *Selected Experiences in Radiology. (Fourth Year.)* CR (See Conjoined Courses.)

## Surgery (Surg.)

Professors Watne (*Chairperson*), Boland, Moran, Tarnay, Warden, and Zimmermann; Clinical Professors Bradford (Emeritus), Easley (Emeritus), Gilmore, Gray, Hershey (Emeritus), McConnell, O'Dell, Trenton, and Walker; Associate Professors Hrabovsky and McDowell; Clinical Associate Professors Bock, Charbonniez, Ghaphery, Glass, Kappel, J. Khan, M. Khan, King, Leadbetter, Linger, MacDonald, Mendoza, Schaefer, Thorngate, Velasquez, and Voss; Assistant Professors Farrell, Harris, Kusminsky, and Savrin; Clinical Assistant Professors Aburahma, Al-Hajj, Boustany, Dickie, Dickinson, Fedde, Figueroa, Fogerty, Gale, Graber, Griswold, Heiskell, Johnson, Kim, Lee, Mantz, J. Page, Polack, Reed, Susan, and Trammell; Instructors Evans, Nullet, Rector, Veach, and Zekan; Clinical Instructors Foster, B. Page, Patel, Rashid, Strauch, and Thrush.

341. *Clinical Clerkship in Surgery. (Third Year.)* CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of house staff and attending surgeons. Students are an integral part of the team



providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.

399. *Selected Experiences in Surgery. (Fourth Year.)* (See Conjoined Courses.)

## Urology (Urol.)

Professors Milam (*Chairperson*) and Kandzari; Assistant Professor Belis; Clinical Associate Professors Lane, McCoy, McCuskey, Summers, and Trapp; Clinical Assistant Professors Celis, Durig, Franz, Lee, Lindert, Naranjo, Ravitz, and Shannon; Clinical Instructor Kassis, McClellan, and Serrato.

399. *Selective Experiences in Urology. (Fourth Year.)* (See Conjoined Courses.)

# Medical Technology

## Undergraduate Program

The undergraduate program in Medical Technology is under the administration of the School of Medicine. Students are admitted into the program leading to a bachelor of science degree after the completion of two years of premedical technology in an accredited college or university. The WVU medical technology program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and by the National Certification Agency for Medical Laboratory Personnel (NCA).

The undergraduate curriculum includes the premedical technology program, which is offered in the WVU College of Arts and Sciences and at Potomac State College in Keyser and the medical technology program which is offered in the School of Medicine.

Courses of the first two years (premedical technology) may be taken in any institution of recognized standing that offers the courses required for admission into the medical technology program.

Since the course of study of the last two years is of a professional nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses which introduce the student to the medical sciences and courses which prepare the student for the work of the senior year. During the senior year (the second year in the medical technology program) the student receives both didactic instruction and practical experience in the University Hospital laboratories.

The program's primary aim is to provide a strong undergraduate program in medical technology which leads to a Bachelor of Science degree and which provides an educational background acceptable for graduate work in the medical sciences. The purposes are: (1) to provide a program in medical technology which meets the academic standards of the University; (2) to provide medical technologists for clinical, public health, and research laboratories; (3) to provide an educational background which enables students to prepare for teaching and supervisory positions in medical technology; and (4) to provide an educational background acceptable for graduate work in the medical sciences.

A program for certified medical technologists who desire to complete requirements for a Bachelor of Science degree is available. (Further information may be obtained by contacting the Medical Technology Programs Office.)

## Admission

Application for admission into the junior year (first year in the undergraduate medical technology program) should be made before the beginning of the second semester of the sophomore year in college. Students at WVU or Potomac State College are not transferred automatically from the preprofessional course (first two years) to the professional course (third and fourth years.) Students are selectively admitted to the program for their final two years of work.

Application forms for admission to the professional course are available after December 1 from the office of the Assistant to the Dean of Admissions and Records, Medical Center. These forms should be completed and returned to that office no later than February 1, if the student expects to enter the succeeding first semester classes.

Admission to the third year is on the recommendation of the Admissions Committee to the Dean. A personal interview with the Committee is required. A minimum grade-point average (over-all and science) of 2.0 is required for admission.

### Admission Requirements

Complete information concerning WVU admission, fees and costs, registration, regulations, etc., may be found in the *Undergraduate Catalog* for the College of Arts and Sciences.

(a) Admission requirements for the first year (premedical technology) are those for the College of Arts and Sciences.

(b) Admission to the third year (first year of the medical technology program) is based upon two years of college work with a total of 64 hours as follows:

*English.* 6 hours. (Composition and rhetoric.)

*Biological Science.* 8 hours. (General biology or general zoology.)

*Chemistry.* 15-16 hours. (Inorganic chemistry, 8 hours; quantitative analysis, 3-4 hours; organic chemistry, 4 hours.) (Transfer students are required to have a complete course in organic chemistry to include aliphatic and aromatic compounds.)

*Physics.* 8 hours.

*Physical Education.* 2 hours. (University requirements for students taking first two years in residence.)

*Mathematics.* 3 hours. (College algebra is the minimal course requirement.)

Electives to complete the required hours and to meet WVU Core Curriculum requirements.

Courses such as bacteriology, parasitology, and anatomy should not be taken until after the completion of the sophomore year. A foreign language is recommended for students who plan to do graduate work.

## CURRICULUM PLAN

### Premedical Technology

First Year			
<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Chem. 15—Inorganic .....	4	Chem. 16—Inorganic .....	4
Engl. 1—Comp. & Rhet. ....	3	Engl. 2—Comp. & Rhet. ....	3
Math. 3 .....	3	Elective .....	3
Biol. 1 .....	4	Biol. 2 .....	4
P.E. 1 .....	1	P.E. 2 .....	1
M. Tec. 1** .....	1	M. Tec. 2** .....	1
	16		16

## Second Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Chem. 115—Quantitative.....	4	Chem. 131—Organic.....	4
Electives* .....	6-7	Electives* .....	6-9
Phys. 1 .....	4	Phys. 2 .....	4
M. Tec. 3** .....	3		
	17-20		14-17

## Medical Technology

### Third Year

#### (Medical Technology I)

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
M. Tec. 100 .....	4	Parasitol. 224 .....	4
Bioch. 139 .....	5	M. Bio. 223 .....	5
Physi. 241 .....	4	Bioch. 239 .....	4
Elective .....	3	M. Tec. 101 .....	4
	16		17

### Fourth Year

#### (Medical Technology II)

Students receive didactic and clinical instruction in the University Hospital laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. Students may be required to be "on duty" at irregular hours due to the professional nature of the collegiate program. Likewise, if the student has excessive absences during the senior year, the time loss must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	<i>Hr.</i>
M. Tec. 200—Orientation .....	No Credit
M. Tec. 220—Immunohematology and Blood Banking .....	2
M. Tec. 221—Immunohematology and Blood Banking Laboratory .....	5
M. Tec. 230—Clinical Chemistry .....	2
M. Tec. 231—Clinical Chemistry Laboratory .....	5
M. Tec. 240—Clinical Hematology .....	2
M. Tec. 241—Clinical Hematology Laboratory .....	5
M. Tec. 250—Clinical Microbiology .....	2
M. Tec. 251—Clinical Microbiology Laboratory .....	5
M. Tec. 260—Instrumentation .....	2
M. Tec. 265—Laboratory Management .....	2
M. Tec. 270—Clinical Microscopy .....	2
M. Tec. 275—Clinical Histopathology .....	2
M. Tec. 280—Clinical Immunology .....	2
M. Tec. 290—Scientific Research and Writing .....	1-4

42

---

\*Electives from Group A and Group B are to be selected to meet University Core Curriculum requirements.

\*\*Medical Technology I, 2, and 3 are not required subjects. It is highly recommended that all students take these courses.



## Degree

The degree of Bachelor of Science in Medical Technology is granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Graduate Program

The WVU Medical Technology graduate program prepares graduate medical technologists for positions either as administrators and teachers in medical technology educational programs, or as supervisors in special areas of the clinical laboratory. The primary objective is to assist in development of knowledge in an area in administration, in education, or a special area of interest selected by the student which may be a special medical laboratory science as the specific area applies to laboratory medicine. Specializations include clinical chemistry, clinical microbiology, hematology, and immunohematology. The specific course work requirements for the master of science degree rests with the graduate adviser in the student's specific area of interest.

*Graduate Committee:* Professors J. Krall, B. Love, H. Mengoli, D. Moore, Jr., N. Rodman, and S. Jagannathan.

## Admission

Applicants must have a baccalaureate degree in medical technology from an accredited institution or a baccalaureate degree in an allied field and be a certified medical technologist with an acceptable certifying agency.

The area of concentration in medical technology desired by the student is considered in the evaluation of the undergraduate record as follows:

1. Individuals who desire to do special study in clinical chemistry, hematology, or immunohematology must have completed a minimum of 8 hours of physics, 3 hours of mathematics, 4 hours of organic chemistry, and 4 hours of quantitative chemistry on the college level.
2. Individuals who desire to do special study in microbiology must have completed 4 hours of organic chemistry and 16 hours of biological sciences.
3. A minimum of one year's experience in a clinical laboratory is required for admission.

Students will be required to make up deficiencies in the above, as well as other deficiencies deemed necessary by the adviser.

Applicants must have a minimum undergraduate grade-point average of 2.5 (based on A = 4.0 grade points) for admission.

All applicants to the graduate program are required to take the general aptitude part of the Graduate Record Examination. Results should be sent to the Medical Technology Programs Office, West Virginia University.

Two letters of reference must be on file in the Medical Technology office. One letter should be from the major adviser in the undergraduate college and another from the immediate supervisor of the applicant's present position. An interview will be requested for all applicants who meet the requirements for admission.

Applicants are selected for admission on the basis of scholastic standing, recommendations, and interest in the field of medical technology. The number of applicants accepted is necessarily limited by the available facilities; and in general, applicants with the most experience are considered first.

## Application Procedure

A preliminary application is filed in the Medical Technology office.

Letters of recommendation are sent to the Medical Technology Programs Office.

After approval of the preliminary application, the admission procedure is the same as for other programs in the WVU Graduate School.

A personal interview may be required before final admission to the program. This interview will give the graduate student an opportunity to evaluate the program and to determine if the program will offer to him/her the educational opportunities which he/she desires.

## Course of Study

It is expected that the students who enter the graduate program in Medical Technology will have a goal in mind and a special field of interest in medical technology. The program is tailored to the needs of the student as far as possible. A minimum of 36 semester hours of credit including a research problem is required. The student selects a major area of concentration from either education, supervision, or administration, and a minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunohematology.

A minimum of 12 semester hours of course work in education to include the following is required of all students:

(A). The three following courses are required:

Ed. P. 330—Advanced Education Measurements . . . . . 3 hr.

Ed. P. 320—Introduction to Research . . . . . 3 hr.

Ed. F. 320—Philosophic Systems and Education . . . . . 3 hr.

(B). The student selects *one* of the following:

Hl. Ed. 305—Philosophy of Health Education . . . . . 3 hr.

Ed. P. 260—Instructional Media and Technology . . . . . 3 hr.

Ed. P. 360 or 361—Instructional Systems . . . . . 3 hr.

Ed. P. 450—Psychological Foundations of Learning . . . . . 3 hr.

Ed. P. 451—Principles of Instruction . . . . . 3 hr.

Ed. A. 330—Principles of Education Leadership . . . . . 3 hr.

Ed. A. 331—Principles of Supervision . . . . . 3 hr.

Ed. F. 300—Sociology of Education . . . . . 3 hr.

(C). Ed. P. 311 (Statistical Methods), Stat. 311 (Statistical Methods), or C. Med. 311 (Biostatistics), is strongly recommended.

Other courses to complete 36 semester hours are selected by the student (with the help of the adviser) in the area of concentration selected by the student. Students may select courses in departments in schools other than the School of Medicine.

All students must complete a minimum of 18 semester hours in a science related to medical technology including Seminar (3 hr.) and Problem Study (6 hr.).

All students must rotate for orientation purposes through all sections of the University Hospital Clinical Laboratories to include microbiology, hematology, chemistry, immunohematology, and histopathology for a minimum of two days in each laboratory or a total of ten days.

In addition, at the discretion of the student's adviser, other requirements in teaching, supervision, and administration may be necessary.

The adviser works out with the student a plan of study for the entire graduate program. This plan is usually made at the end of the first semester of the student's graduate study. A copy of this "plan of study" is signed by the adviser and student and sent to the Medical Technology Office to be put in the student's file.

## Examinations

A final written comprehensive examination in the major and minor interest areas is given approximately one month before the date on which the degree is to be awarded.

An oral defense of the problem is given one month after submission of the Problem Study in its final form to the Graduate Committee.

## Requirements for Degree

All requirements for the master of science degree, as outlined in the *WVU Graduate School Catalog*, must be fulfilled. These requirements can be fulfilled in three semesters of full-time work, but ordinarily at least four semesters are required for completion of the degree requirements.

Degree candidates must have a 3.0 grade-point average and must have removed all incomplete grades and deficiencies.

All students must complete a problem study (see M. Tec. 497).

## Registration Requirement

Owing to the limit on the number of students who can be enrolled in the graduate program in medical technology, all students (part-time and full-time) must enroll each semester to continue in the program.

## Medical Technology (M. Tec.)

1. *Orientation to Medical Technology*. I, II. 1 hr. Principles and practices of medical technology and the role of the medical technologist as a member of the health team.
2. *Orientation to Medical Technology*. II. 1 hr. Continuation of work of M. Tec. 1.
3. *Introduction to Medical Laboratory Technology*. I. 3 hr. Introduces the procedures used in the clinical laboratory and demonstrates their relationship to health and disease.
100. *Medical Technology*. I. 4 hr. Gross and microscopic structure of human body as it applies to the practice of medical laboratory technology.
101. *Medical Technology*. II. 4 hr. Continuation of M. Tec. 100.
200. *Orientation*. S. No credit (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics.
220. *Immunohematology and Blood Banking*. I, II. 2 hr. Lectures on immunohematology and blood banking theory and practice.
221. *Immunohematology and Blood Banking Laboratory*. Arranged. 5 hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.
230. *Clinical Chemistry*. I, II. 2 hr. Lectures on principles of clinical chemistry procedures; their clinical significance and implication in diagnosis.
231. *Clinical Chemistry Laboratory*. Arranged. 5 hr. Practice in the clinical chemistry laboratory.
240. *Clinical Hematology*. I, II, S. 2 hr. Lectures in hematologic theory and practice.
241. *Clinical Hematology Laboratory*. Arranged. 5 hr. Application of hematological principles to laboratory medicine. Emphasis on routine and specialized procedures, evaluation and problem solving.
250. *Clinical Laboratory*. I, II. 2 hr. Presentation and discussion of current methodology employed in the processing of clinical microbiology specimens, isolation and identification of pathogenic microorganisms, and determination of antimicrobial sensitivities.



251. *Clinical Microbiology Laboratory*. Arranged. 5 hr. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms; processing of specimens and antibiograms. Includes experiences in pathogenic mycology and parasitology.
260. *Instrumentation*. I, II, S. 2 hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.
265. *Laboratory Management*. I, II. 2 hr. Laboratory organization, economics, ethics, and records.
270. *Clinical Microscopy*. I, II, S. 2 hr. Lectures and laboratory practice in urinalysis, gastric analysis, pregnancy tests, and other procedures.
275. *Clinical Histopathology*. I, II, S. 2 hr. Lectures and laboratory practice in preparation of human tissues and organs for gross and microscopic examination.
280. *Clinical Immunology*. I, II, S. 2 hr. Lectures and laboratory practice in the principles of clinical immunology and their relationship to clinical laboratory technology.
290. *Scientific Research and Writing*. I, II. 1-4 hr. Conducting a scientific research project in medical technology and writing a scientific article for publication. Oral presentations are included.
300. *Seminar*. I, II, S. 1 hr. Seminars include topics in laboratory management and education in medical technology, and timely topics. Minimum of 3 semester hours to include all three topics is required of all graduate students in the medical technology program.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration. This study is reported in a thesis-style manuscript. For this study and report, the student registers in M. Tec. 497. Total number of hours earned in M. Tec. 497 is determined by the student's adviser. As many as 9 semester hours may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M. Tec. 497 will be counted toward fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.

## Division of Physical Therapy

The Division of Physical Therapy, under the auspices of the School of Medicine, offers the final two years of a baccalaureate program leading to a degree in physical therapy.

The first two years of study may be completed in the College of Arts and Sciences of WVU, or any other accredited institution which offers courses comparable to the admission requirements of the Division of Physical Therapy. To be eligible for a degree a student must complete the final two years of the curriculum at WVU.

Admission to the third year is based upon 62 or more credit hours of study which satisfies the University Core Curriculum requirements and the prerequisites, or their equivalent, of the Division of Physical Therapy. *Registration in the first two years does not automatically assure the student a place in the junior class.* A student will be accepted on a competitive basis and selection will be based on scholastic standing and on those personal characteristics which are desirable in physical therapists.

The student must satisfactorily complete a three-month period of clinical internship before the awarding of the baccalaureate degree. A Certificate of Proficiency in Physical Therapy then will be awarded which entitles the graduate to seek membership in the American Physical Therapy Association and to become eligible for state licensure for the practice of physical therapy. A physical therapist can practice professionally only after having passed the state board examination in the state where employment is desired.

A personal interview with the Admissions Committee is required. Only those students who have at least a 2.60 grade-point average and a 2.75 science average (on a 4.0 scale) and who will have completed all the prerequisites of the Division of Physical Therapy by the current Spring semester will be interviewed. Individuals who do not meet the above requirements but who believe extenuating circumstances justify admission may petition the Admissions Committee for an interview. Reasons why the application should receive special consideration should be clearly stated in the petition.

*Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.*

The Admissions Committee will advise the applicant of the time and place of the interview.

## Admission to the Professional Program

A personal interview with the Admissions Committee is required. Only those students who have at least a 2.6 grade-point average and a 2.75 science average (on a 4.0 scale) and who will have completed all the prerequisites of the Division of Physical Therapy by the current spring semester will be interviewed. Individuals who do not meet these requirements but who believe extenuating circumstances justify admission may petition the Admissions Committee for an interview. Reasons why the application should receive special consideration should be clearly stated in the petition. The Admissions Committee will advise the applicant of the time and place of the interview.

Official enrollment forms are available at the office of the Assistant to Dean, Admissions and Records, Medical Center, beginning December 1 of each year. Application forms should be returned no later than March 1 in the year admission is desired.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.*

## Academic Standards

### Clinical Education Program

Students must satisfactorily complete the pre-internship clinical education program. During this time students will be expected to defray any and all costs of the program. The Clinical Internship Program is an 18-week program and is scheduled following the end of the last semester of the senior year. Before the student is allowed to leave for clinical internships the student must: (1) have completed *all* academic requirements of the program satisfactorily; (2) be of good health and have a full health insurance policy which will be in effect the entire 18 weeks of internship; (3) have an active professional liability insurance policy; (4) be prepared to defray the following types of costs: tuition, travel, room and board, and any incidental cost.

### Promotions and Suspensions

Physical therapy students must register for all prescribed courses for each semester, except by special permission from the Academic Standards Committee of the Division. Permission for repetition of work may be granted only by the Academic Standards Committee.

1. No student will be permitted to register for any work of second year until all courses for the preceding year have been completed successfully.

2. If in the opinion of the faculty that work completed in any unit of a course indicates that a student has a serious lack of understanding of that unit a grade of "I" (incomplete) will be submitted for that student. This may occur even though the student has an acceptable average of all units for the course. It is the student's responsibility to consult with the instructor about the means and schedule for removing incomplete grades.

3. A student who does not assume the responsibility for removing incomplete grades, or who fails to do so in a satisfactory manner, will be given an "F" for the course and will not be permitted to register for advanced courses.

4. No student will be permitted to register for clinical internships (Ph.Th. 290) until all other courses have been satisfactorily completed.

5. Notwithstanding the above rules, a student whose performance has been considered unsatisfactory by the Academic Standards Committee may be required, as a condition for advancement or graduation, to complete special requirements and/or an extended period of study. Such a requirement or special opportunity may be made available at the discretion of the Academic Standards Committee. In addition, the Division of Physical Therapy reserves the right to suspend any student who does not perform at an overall level considered satisfactory for patient care.

6. A student who has been suspended may apply to the Admissions Committee of the Division of Physical Therapy for readmission.

## Curriculum Plan

This curriculum is designed to satisfy the course requirements for admission to the professional portion of the curriculum in Physical Therapy offered by the School of Medicine. The Core Curriculum requirements must be satisfied, and a total of 62 hours is required for admission to the first professional year. This suggested curriculum plan allows latitude in career choice and is basically compatible with various curricula in the arts and sciences.

### First Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Engl. 1.....	3	Engl. 2.....	3
Psych. 1**.....	3	Chem. 16**.....	4
Chem. 15**.....	4	P.E. 2.....	1
P.E. 1.....	1	Electives*.....	9
Electives*.....	6		
	<u>17</u>		<u>17</u>

### Second Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Phys. 1**.....	4	Phys. 2**.....	4
Biol. 1**.....	4	Biol. 2**.....	4
Psych. 141**.....	3	Psych. elect.**.....	3
Stat. 101**.....	3	Electives*.....	6
Electives*.....	3		
	<u>17</u>		<u>17</u>

\*Suggested electives: Foreign Language (6 hr.); Math. 4; Logic; B. Law 111; Psych. 164, 232, 242, 281, 282; Biol. 266.

\*\*Courses required for admission to Division of Physical Therapy. Chem. 15 and 16 are recommended because they are basically compatible with other curricula.)



### Third Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Path. 128 .....	2	Anat. 102 .....	3
Anat. 101 .....	4	Anat. 208 .....	2
Anat. 103 .....	2	Ph. Th. 110 .....	3
Physi. 241 .....	4	Ph. Th. 112 .....	3
Ph. Th. 111 .....	5	Ph. Th. 114 .....	2
Ph. Th. 117 .....	1	Ph. Th. 116 .....	1
		Ph. Th. 118 .....	3
	18		17

### Fourth Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Ph. Th. 271 .....	4	Ph. Th. 270 .....	3
Ph. Th. 273 .....	3	Ph. Th. 272 .....	2
Ph. Th. 275 .....	3	Ph. Th. 274 .....	4
Ph. Th. 277 .....	3	Ph. Th. 276 .....	3
Ph. Th. 279 .....	4	Ph. Th. 278 .....	5
Ph. Th. 281 .....	1	Ph. Th. 282 .....	1
	18		18

### Summer

	<i>Hr.</i>
Ph. Th. 290 .....	1-6

## Courses of Instruction in Physical Therapy (Ph. Th.)

Associate Professors Burkart (*Director*), Petronis, and Weaver; Assistant Professors Barnes, Hart, and Meacci; Instructor Harris.

(Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section.)

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal and neuromuscular systems including biomechanics, principles of movement, and analysis of muscle and joint action. Abnormal human function due to physical disabilities and pathological disturbances. Students study normal human development and maturation through laboratory sessions involving evaluation and observation of children ranging in age from newborn to 5 years.
111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. PR: Biol. 1, 2; Chem. 15, 16. Lecture-laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy orientation to theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.
112. *Pulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, pathology, and treatment of pulmonary conditions. Laboratory in pulmonary evaluations and respiratory treatment procedures. Lectures and case presentations in medicine and surgery concerning chest and thoracic conditions.
114. *Medicine and Neurology*. II. 3 hr. PR: Ph. Th. 111. Lectures and case presentations in medicine including GI, hematology, endocrinology, dermatology, physiology of aging, and infectious diseases. Orientation to neurology and neurological disorders.
116. *Clinical Education I*. II. 1 hr. (Graded Pass-Fail only.) The physical therapy department, equipment, and procedures. Students observe patient treatment by experienced therapists and perform basic treatment procedures under direct supervision.
117. *Seminar*. I. 1 hr. PR: Ph. Th. 111. Investigation of selected problems and issues.

118. *Basic Therapeutic Exercise*. II. 3 hr. This course includes the application of principles and techniques of traditional forms of anaerobic and aerobic exercises and goniometry. Isotonic, isometric, and isokinetic exercises are presented with an emphasis on the understanding of human cardiopulmonary functions under the stress of motor activity. Laboratory work in the application of basic exercises and pertinent cardiopulmonary stress tests is included.
270. *Organization and Management*. II. 4 hr. PR. Ph. Th. 275, 281. Basic principles and philosophy of management and the organization with emphasis on styles of leadership, group dynamics, theories of motivation, delegation of responsibility and authority, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.
271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures. Basic principles and actual clinical experience with patients offered in electromyography, including nerve conduction and needle insertion studies.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation*. I. 4 hr. PR: Ph. Th. 110, 118. Principles and techniques of performing evaluation testing procedures within the scope of the physical therapist, including manual muscle testing, neurological, ADL, and basic orthopedic evaluations.
274. *Orthopedic Physical Therapy*. II. 3 hr. PR: Ph. Th. 110, 118, 273. Selected lectures and cases in orthopedics. Emphasis on effects and treatment of disease and injury to musculoskeletal and neuromuscular systems. Laboratory practice in orthopedic assessment and procedures, including mobilization techniques.
275. *Professional Literature and Research*. I. 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in the allotted time.
277. *Clinical Teaching*. I. 2 hr. PR: Ph. Th. 273. Emphasis on the physical therapist as a teacher. Students develop skill and techniques in the facilitation of learning, objective writing, and evaluation in both clinic and didactic settings.
278. *Correlative Rehabilitation*. II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise*. I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and functional anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise and methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.
281. *Clinical Education II*. I. 1 hr. (Graded Pass-Fail only.) Continuation of Ph. Th. 116. The student's participation in treatment programs is increased and enlarged to include rehabilitation techniques and basic testing and evaluation procedures.
282. *Clinical Education III*. II. 1 hr. (Graded Pass-Fail only.) Supervised experience in more specialized procedures and testing techniques and inpatient program design.
290. *Clinical Education IV*. S. 1-12 hr. (Graded Pass-Fail only.) Three summer affiliations of six weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health.

# School of Nursing

The faculty believes that man is a physiological, psychological, and social being capable of rational thought and action. Throughout the life span, man systematically progresses through developmental stages and continually strives to meet basic human needs in a uniquely patterned way. Within the context of the sociocultural background, man perceives and responds to stimuli as an integrated whole. Basic human integrity is maintained throughout the process by dynamic continuous interaction with the environment.

Man is a member of innumerable systems within a total society which is organized to meet needs identified by its people with the family being the primary system for meeting social and health needs. To substitute for or assist the family in meeting the health needs of its members, society organizes health care systems. Each individual has the right of access to those resources which will assist in the attainment and maintenance of optimal states of health.

In man, health is a dynamic state of being which constantly fluctuates between varying degrees of illness and wellness. Since man is an integrated being the individual's state of health embodies physiological, psychological, and social dimensions. The optimal state of health which an individual can attain and maintain is unknown but is influenced by genetic endowment, the environment, and the ability to cope with actual or potential stressors.

Nursing shares with other disciplines the overall purpose of the health care system in assisting the client to attain, regain, and retain optimal health. Specifically, the purpose of nursing is to assist the client in the performance of those activities contributing to optimal health (or a peaceful death) that the individual or family would normally initiate and perform unaided if they had the necessary strength, knowledge, and motivation. The practice of nursing embodies the holistic concept of man which is derived from a synthesis of knowledge of the humanities and biological and behavioral sciences. From this conceptual base, the nurse develops and applies technical, interpersonal and intellectual skills in assisting individuals, families, and community groups meet health needs.

The faculty believes that learning is a life-long active process, one which is favored by a climate of personal acceptance of the learners as integrated beings with their own internal motivation, attributes, dignity, and worth. Learning is also a progressive and cumulative experience resulting in changed behavior which becomes useful in subsequent learning situations.

The teaching-learning process includes opportunities for teacher-student interaction in setting goals, selecting and evaluating learning experiences, and in appraising instructional methods and student progress. The process of education takes place in an atmosphere characterized by a democratic spirit in which students and faculty can share learning experiences. Such climate encourages the development of intellectual curiosity, systematic inquiry, the capacity for self-direction and a sense of commitment to continued learning to the end that the individual may become an informed, participating citizen responsible for contributing to the improvement of the profession and society through creative efforts.

## Admission

To qualify for admission to the School of Nursing basic program a candidate must have completed one year of prescribed courses in an accredited college or university. Applicants are eligible for review by the Admissions Committee after completion of one full semester of course work in an accredited college or university. The prescribed courses include subjects such as: Chemistry, 8 hours; English Composition, 6 hours;



Sociology, 3 hours; Psychology, 3 hours; Nutrition, 3 hours; Life-Span/Growth and Development, 3 hours; Core subjects, Physical Education, and/or electives, 12 hours.

A dominant factor in the number of students admitted is the limitation of space. A second factor is the academic record of the applicant. The minimum grade-point average for the West Virginia applicant is 2.5; for out-of-state applicants it is 3.2. West Virginia applicants whose grade-point average falls between 2.3 and 2.5 may petition in writing to the Committee on Admissions for special consideration. Such a petition must clearly state the reason(s) why the applicant should receive special consideration. Petitions should be submitted along with the application to nursing.

Out-of-state residents with a grade-point average between 3.0 and 3.2 may petition in the same manner. *Since West Virginia University is a state university, no more than 10 percent of those admitted may be from out of state.*

The review of applicants takes approximately two to three months. The students are notified by mail after review of all applicants is completed. Two weeks after receipt of the letter of acceptance, the student must send a letter stating acceptance of the position to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance deposit must accompany the letter. This deposit is applied toward the registration fees for the first semester. The deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

The School of Nursing will identify twelve in-state alternate candidates and three out-of-state alternate candidates. In the event that a student chooses not to accept a place in the class, an alternate will be chosen by the same review process. Vacancies may occur and will be filled up to the last day to register.

Application for admission to the School of Nursing should be made by January 1 of the year the candidate wishes to be admitted. These may be presented in person or mailed directly to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. An application fee of \$10.00, payable to West Virginia University, must accompany the completed application. The deadline for receipt of transcripts or other required materials is February 15.

## Transfer Students

A student from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum. Application for transfer students should be initiated by January 1. Deadline for receipt of transcripts or other required materials is February 15. Apply to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

## Registered Nurse Students

The School of Nursing offers graduates of diploma and associate degree nursing programs the opportunity to complete requirements for the baccalaureate degree in nursing at the Morgantown campus and at the Charleston Division of the WVU Medical Center. General education credits earned in any accredited college or university may be applied toward the fulfillment of the degree requirements, if the course work is comparable.

Registered Nurse applicants are admitted directly to the School of Nursing. Acceptance and placement in the program is dependent upon the individual's academic record and upon the number of spaces available in the program. The license to practice nursing and a grade-point average of 2.5, or better, are required. Registered Nurses whose grade-point average falls below 2.5 may petition in writing to the Committee on Admissions for special consideration.

About 30 hours of general education courses that meet the WVU Core Curriculum and School of Nursing requirements are recommended before enrollment in the first nursing course, Nursing 99, Basic Concepts of Professional Nursing. Courses from the following list are appropriate: English I and 2, 6 hours; Chemistry, 6-8 hours; Introductory Psychology, 3 hours; Introductory Sociology, 3 hours; Anatomy, 3-4 hours; Physiology, 3-4 hours; Microbiology, 3-4 hours; Pharmacology and Toxicology, 3-4 hours; Nutrition, 3 hours. Additional Core A, B, or elective credit, before enrolling in Nursing 99, is advised. Additional courses may be advised on the judgment of the adviser upon review of the student's background.

All registered nurse students are required to enroll in Nursing 99 (Basic Concepts in Professional Nursing.) The purpose of this course is to facilitate transition to the baccalaureate curriculum, to assist students with identified learning needs relevant to the curriculum, and to diagnose the students' readiness for advance placement of junior level courses.

Graduates of associate degree programs establish lower-division nursing credit by the transfer of hours. Graduates of diploma programs establish lower-division credit by comprehensive challenge examination of sophomore nursing courses.

Upon successful completion of Nursing 99, and the establishment of lower-division credit, the registered nurse student is eligible for the advanced placement experience. This experience is a conceptual approach to the challenge of junior courses. During this experience a diagnostic and prescriptive analysis of the learning needs of the individual student is made. This diagnosis forms the basis for progression through the remainder of the nursing curricula. Enrollment in junior or senior courses and/or special prescriptive work may follow the advance placement experience. All prerequisites must be met before advancement into senior nursing courses. The senior courses must be taken by enrollment.

Credit for all required nursing courses must be established by enrollment or by advanced placement.

Upon receipt of a letter of acceptance into the program, applicants must send a letter stating intent to enroll to the Administrative Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance tuition deposit should accompany the letter. This deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

Requests for information and application forms for the Morgantown campus should be addressed to the Administrative Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

Application forms and information about the program at Charleston may be obtained from the Student Affairs Coordinator, Charleston Division, WVU Medical Center, 3110 MacCorkle Avenue, S.E., Charleston, WV 25304.

## Academic Standards and Graduation Requirements

The student must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) pass all graded nursing courses with a grade of C or better; and (3) pass all required courses.

A student who fails to meet the requirements listed above must present to the adviser an acceptable plan for meeting the requirements. This plan must be within the policies and standards set by the Committee on Academic Standards.

All students are required to take the National League for Nursing achievement examinations in the respective areas at the completion of their senior-level experience in Maternity Nursing, Nursing of Children, Medical-Surgical Nursing, Psychiatric Nursing, and Community Health Nursing. The student pays approximately \$12.00 for the entire series.

The degree of Bachelor of Science in Nursing (B.S.N) is conferred upon completion of a minimum of 126 hours. Based on waiver of Nursing 3 and Physical Education, the degree of Bachelor of Science in Nursing (B.S.N.) is conferred on the Registered Nurse student upon completion of a minimum of 123 hours.

## Non-Credit Continuing Education Program

The School of Nursing offers a comprehensive state-wide continuing education program for nurses desiring to enhance their contributions to the health care of patients and clients through self development activities. This is made possible through a variety of ongoing workshops, seminars, conferences, training programs, mini-courses, and telelecture courses. The telelecture courses are implemented via a two-way amplified telephone system connecting hospitals throughout the state with the School of Nursing broadcasting station where the courses emanate. All education offerings are approved for Continuing Education Units (CEU) and are a minimum of five contract hours. An individual record of CEUs awarded is maintained by the Division of Off-Campus Credit and Continuing Education and is available to participants upon request. General announcements of educational offerings are published annually with specific program information provided during the interim period. Participant's fees vary according to the educational offering and are assessed at the time of registration.

Announcements of educational offerings may be obtained by contacting the School of Nursing.

## Fees, Expenses, Housing, Transportation

Students registering pay the fees shown in the WVU Medical Center fees charts, plus special fees and deposits as required. Fees are subject to change without notice.

Expenses of students attending WVU vary widely according to course of study and their individual tastes.

Students are expected to provide their own equipment and instruments for the clinical courses.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Telephone 304/293-3706.

For information concerning University and privately owned off-campus housing, write or call the WVU Housing Office, 440 Medical Center Dr., Morgantown, WV 26506. Telephone 304/293-3621.

Some clinical experiences require the student to travel in a multi-county area. Each student is responsible for providing her/his own transportation.

## Curriculum

The conceptual framework of the WVU School of Nursing is based on four concepts. These are *man*, the nursing process, *health*, and the environment.

The concept of *man* is basic to nursing. Each man assumes many roles in his life. In nursing these roles are specific. Therefore, the concept *man* refers either to the nurse role and/or the client role. The second and third major concepts are *health* and the nursing process. The achievement of health, or a specific goal of health, is the purpose of the nurse providing assistance to the client. The nursing process is the means for achieving this end. The nursing process between nurse and client takes place in and influences a certain *environment*. On the other hand, the *environment* influences the nursing process in many instances. Therefore, the purpose of nursing is to assist the client in the performance of those activities contributing to his health, or in some instances to a comfortable death. These activities would normally be initiated and



performed by the client or his family if they had the necessary strength, knowledge and motivation to do so. The conceptual framework, philosophy and terminal objectives of WVU School of Nursing reflect this purpose.

In addition to the four basic concepts there are many subconcepts which are interwoven into the entire curriculum. The successive use of subconcepts will be with increased depth and breadth of knowledge, attitude, and skill.

FIRST YEAR		SECOND YEAR	
	<i>Hr.</i>		<i>Hr.</i>
Core A .....	3	Pcol. 160.....	3
Chem. 11, 12 .....	8	Anat. 101 .....	4
Engl. 1 & 2.....	6	Physi. 141 .....	4
P.E. General Program .....	2	M. Bio. 26 .....	4
Nsg. 3 .....	1	Core A .....	3
Nutrn. 71 .....	3	Nsg. 75 .....	2
Psych. 1 .....	3	Nsg. 80 .....	4
Psych. 141 .....	3	Nsg. 81 .....	2
Soc.&A. 1.....	3	Nsg. 82 .....	4
	<hr/>	Nsg. 83 .....	2
	32		32
Nsg. 99 (R.N. only).....	6		
SUMMER BETWEEN SECOND AND THIRD YEAR		EITHER THIRD OR FOURTH YEAR	
	<i>Hr.</i>		<i>Hr.</i>
Nsg. 180 .....	3	Core A .....	6
Nsg. 181 .....	3	Electives .....	6
	<hr/>		12
	6		
THIRD YEAR		FOURTH YEAR	
	<i>Hr.</i>		<i>Hr.</i>
Nsg. 175 .....	2	Nsg. 275 .....	3
Nsg. 182 .....	4	Nsg. 280 .....	3
Nsg. 183 .....	4	Nsg. 281 .....	1
Nsg. 184 .....	4	Nsg. 282 .....	2
Nsg. 185 .....	4	Nsg. 283 .....	2
Soc. & A. 211 .....	3	Nsg. 284 .....	3
	<hr/>	Nsg. 285 .....	3
	21	Nsg. 286 .....	3
		Manag. 216 .....	3
			<hr/>
			23

## Master of Science in Nursing (M.S.N.)

The School of Nursing offers a program of study leading to the Master of Science in Nursing (M.S.N.) degree.

The program of study is designed to prepare the professional nurse as a nurse clinician who has the necessary knowledge, attitudes and competencies for the advanced practice of nursing in primary health care.

The philosophy and conceptual framework of the School of Nursing provide the frame of reference for the curriculum sequence. Through the core nursing and elective courses culminating in a final semester of intense practicum, the student builds the theoretical, scientific and humanistic base for nursing practice in primary health care which involves an integration of research, leadership and education concepts with clinical experiences.

The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, thesis option and the opportunity to investigate an area of interest in advanced study. The pattern and duration for the individual student study plan is determined in consultation with a faculty adviser and is based upon the student's background and goals. The program can be completed in four semesters of full-time study.

## Admission Requirements

The applicant must:

1. Meet the admission requirements of the WVU Graduate School.
2. Have completed a baccalaureate program in nursing which is accredited by the National League for Nursing. Applicants with a baccalaureate degree from nursing programs without NLN accreditation or non-nursing programs will be considered on an individual basis.
3. Have completed a course in introductory statistics.
4. Provide the following:
  - a. Statement of philosophy of nursing and professional goals.
  - b. A letter of recommendation from each of the following: head of undergraduate nursing school, employer and a colleague.
  - c. Evidence of a current professional nursing licensure in at least one state.

Preference is given to an applicant with:

1. An undergraduate grade-point average of B (3.0) or better. (A=4.0)
2. At least one year of professional experience.

When all information has been received, the applicant participates in a personal interview with a graduate faculty member for the purpose of validating admission materials, clarifying admission information, projecting a study progression plan, and initial advising. Applications for admission are reviewed throughout the year. Class sizes are limited based on available faculty resources and space.

## Admission Procedure

Applicants wishing to apply to the graduate program in nursing must obtain two application forms from the Office of Admissions and Records, West Virginia University, Morgantown, WV 26506. The application to the Graduate School is to be returned to that office. The application for the graduate program in nursing must be returned to the Chairperson, Graduate Academic Unit, School of Nursing, West Virginia University, Morgantown, WV 26506.

## Degree Requirements

1. Completion of 40 semester credit hours. Minimum of 30 credit hours in nursing and 12 hours of electives, 9 of which must be non-nursing.
2. Completion of a master's paper (3 credits) or a Thesis (3-6 credits).
3. Achievement of an overall academic average of at least B in all work attempted in the master's program.
4. Removal of all conditions, deficiencies, and incomplete grades.

Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

Students are expected to register for courses with letter grades (A, B, C), with the exception of electives which the student may opt to take with Satisfactory (S) or Unsatisfactory (U) grades, subject to the approval of the adviser.

## Curriculum

<i>Nursing Theory, Practice and Research (30-33 credits)</i>		<i>Hr.</i>
Nursing 300—Advanced Nursing in Primary Health Care I.....	3	3
Nursing 301—Advanced Nursing in Primary Health Care II.....	3	3
Nursing 302—Advanced Nursing in Primary Health Care III.....	3	3
Nursing 310—Advanced Nursing Practice I.....	3	3
Nursing 311—Advanced Nursing Practice II.....	3	3
Nursing 312—Advanced Nursing Practice III.....	3	3
Nursing 370—Theories in Nursing.....	3	3
Nursing 373—Research Process and Methods in Nursing.....	3	3
Nursing 400—Advanced Practice IV.....	3	3
Nursing 497—Research (Master's Thesis/Paper).....	3-6	3-6

30-33

### *Electives (9-12 credits)*

Nursing 491—Advanced Study.....	3-0
Cognates.....	12-9

Total.....42

### *A Progression Plan (Full-Time Study)*

<i>Semester I</i>	<i>Hr.</i>	<i>Semester II</i>	<i>Hr.</i>	<i>Semester III</i>	<i>Hr.</i>	<i>Semester IV</i>	<i>Hr.</i>
Nursing 300	3	Nursing 301	3	Nursing 302	3	Nursing 400	3
Nursing 310	3	Nursing 311	3	Nursing 312	3	Nursing 497	3-0
Nursing 370	3	Nursing 373	3	Nursing 497	3	Elective	3-6
		Elective	3	Elective	3		
	9		12		12		9

TOTAL: 42 credits

## Courses of Instruction in Nursing (Nsg.)

3. *Orientation to Nursing*. I. 1 hr. Introduction to philosophy and responsibilities of professional nursing and role of the professional nurse.
75. *Issues of Nursing I*. I. 1. 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature.
80. *Concepts of Nursing I*. I. 4 hr. PR: Sophomore standing or consent. (Taken concurrently with Nsg. 81.) Introduces concepts, principles, and theories of nursing practice in relation to the health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.
81. *Practicum I*. I. 2 hr. PR: Sophomore standing or consent. (Taken concurrently with Nsg. 80.) (Graded Pass-Fail only.) Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families.
82. *Concepts of Nursing II*. II. 4 hr. PR: Nsg. 80, 81 or consent. (Taken concurrently with Nsg. 83.) Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.
83. *Practicum II*. II. 2 hr. PR: Nsg. 80, 81 or consent. (Taken concurrently with Nsg. 82.) (Graded Pass-Fail only.) Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families.



99. *Basic Concepts of Professional Nursing I*. I, II. S. 6 hr. PR: Nursing licensure. Focuses on man (family) related to life cycle, stress adaptation, deviations from wellness. Clinical application of nursing theory stresses interrelatedness of health problems, scientific inquiry, and interpersonal processes. Students are assisted to identify their career goals.
175. *Issues of Nursing II*. I, II. 2 hr. PR: Nsg. 75 or consent. Issues of nursing practice. Emphasizes related theories and research.
180. *Concepts of Nursing III*. S. 3 hr. PR: Junior standing or consent. (Taken concurrently with Nsg. 181.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Builds on past intellectual and interpersonal arts and psychomotor skills.
181. *Practicum III*. S. 3 hr. PR: Junior standing or consent. (Taken concurrently with Nsg. 180.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individual and/or families with acute health problems. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor nursing skills.
182. *Concepts of Nursing IV*. I, II. 4 hr. PR: Nsg. 180, 181 or consent. (Taken concurrently with Nsg. 183.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Emphasizes problems associated with man's adaptation, regulatory function, nutrition, and cellular growth.
183. *Practicum IV*. I. 4 hr. PR: Nsg. 180, 181 or consent. (Taken concurrently with Nsg. 182.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families with acute health problems involving man's adaptation, regulatory function, nutrition, and cellular growth.
184. *Concepts of Nursing V*. II. 4 hr. PR: Nsg. 182, 183 or consent. (Taken concurrently with Nsg. 185.) Concepts, principles, and theories of nursing practice associated with individuals and/or families with acute health problems. Emphasizes problems associated with man's fluid and electrolyte balance, respiratory and cardiovascular function.
185. *Practicum V*. II. 4 hr. PR: Nsg. 182, 183 or consent. (Taken concurrently with Nsg. 184.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families with acute health problems. Emphasizes problems associated with man's fluid and electrolyte balance, respiratory and cardiovascular function.
275. *Issues of Nursing III*. I. 3 hr. PR: Nsg. 175 or consent. Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.
280. *Concepts of Nursing VI*. I. 3 hr. PR: Senior standing or consent. (Taken concurrently with Nsg. 281.) Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.
281. *Practicum VI*. I. 1 hr. PR: Senior standing or consent. (Taken concurrently with Nsg. 280.) (Graded Pass-Fail only.) Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills.
282. *Concepts of Nursing VII*. I. 2 hr. PR: Senior standing or consent. (Taken concurrently with Nsg. 283.) Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.
283. *Practicum VII*. I. 2 hr. PR: Senior standing or consent. (Taken concurrently with Nsg. 282.) (Graded Pass-Fail only.) Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population.
284. *Concepts of Nursing VIII*. II. 3 hr. PR: Nsg. 282, 283 or consent. (Taken concurrently with Nsg. 285, 286.) The synthesis of a personal and professional philosophy of nursing. Emphasis is on concepts influencing the professional role of the nurse within the health care delivery system.

285. *Practicum VIII. II.* 3 hr. PR: Nsg. 282, 283 or consent. (Taken concurrently with Nsg. 284.) (Graded Pass-Fail only.) Selected experiences of practices of professional nursing within the health care delivery system.
286. *Practicum IX. II.* 3 hr. PR: Nsg. 282, 283 or consent. (Taken concurrently with Nsg. 284.) (Graded Pass-Fail only.) Selected experiences for practice of professional nursing of acute health care problems or critical isolated incidents.
300. *Nursing in Primary Health Care I. I.* 3 hr. PR or Conc.: Nsg. 370. (Concurrent enrollment or prerequisite to Nsg. 310, 370.) Analysis and synthesis of concepts in nursing and related sciences for the establishment of the conceptual framework for nursing in primary health care.
301. *Nursing in Primary Health Care II. II.* 3 hr. PR: Nsg. 300, 310. (Concurrent enrollment or prerequisite to Nsg. 311.) Analysis and synthesis of concepts in nursing and related sciences basic to specific strategies for the promotion, maintenance, and restoration of health and prevention of illness with the client's environmental framework.
302. *Nursing in Primary Health Care III. I.* 3 hr. PR: Nsg. 301, 311. (Concurrent enrollment or prerequisite to Nsg. 312.) Analysis and synthesis of concepts in nursing and related sciences basic to the understanding of planned change and the impact in society of nursing practice in primary health care.
310. *Advanced Nursing Practice I. I.* 3 hr. PR or Conc.: Nsg. 300. Selected experiences with clients for the continuing development of skills in health assessment and the application of concepts of nursing in primary health care.
311. *Advanced Nursing Practice II. II.* 3 hr. PR or Conc.: Nsg. 301. Application of concepts and skills relative to the promotion, maintenance and restoration of health and prevention of illness through continuing client relationships in nursing practice in primary health care.
312. *Advanced Nursing Practice III. I.* 3 hr. PR or Conc.: Nsg. 302. Application of concepts and skills relative to planned change strategies with clients in nursing practice in primary health care.
370. *Theories in Nursing. I.* 3 hr. PR: Graduate standing. Comparative analysis of evolving theories in nursing. Emphasis on the development and testing of nursing theories.
373. *Research Process and Methods in Nursing. II.* 3 hr. PR: Nsg. 370. An examination of the research process and methods for incorporation into nursing practice.
400. *Advanced Nursing Practice IV. I, II.* 3 hr. PR: Nsg. 312. Interdependent practice with interdisciplinary seminars for the synthesis of knowledge, attitudes, and competencies in primary health care.
491. *Advanced Study. I, II.* 1-3 hr. PR: Graduate standing; consent. Investigation of topics relative to current issues in primary health care.
497. *Research. I, II.* 3-6 hr. PR: Nsg. 373, 400, consent. (Master's paper/Master's thesis.)

# School of Pharmacy

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program—including two years of pre-pharmacy.

The objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy.

The pharmacy curriculum consists of three years of professional study preceded by a minimum of two years of study in an accredited college of arts and sciences.

The curriculum is designed to provide the student with the scientific and technical knowledge and communication skills required to practice the profession and to inculcate in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions are also available in various government agencies, professional organizations, and industry. Pharmacists are eligible for commissions in the armed forces and the U.S. Public Health Service.

Graduates also may prepare for careers in teaching and research by entering graduate schools for specialization in pharmacy, pharmaceuticals, pharmacognosy, pharmaceutical chemistry, pharmacy administration, and pharmacology and toxicology. The pharmaceutical industry provides opportunities in a variety of capacities in promotion, distribution, production, and research.

## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy whose objective is to promote the interests of pharmaceutical education. All institutional members must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be a citizen, not less than 21 years of age, and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of an accredited school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate, without further examination, with forty-seven other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.



## Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this and the *WVU Undergraduate Catalog*.

Students preparing for the study of pharmacy may satisfy the requirements for entrance into the School of Pharmacy by majoring in any arts and sciences subject and including in their course selections the following, or their equivalents:

English Composition .....	6 hr.	Chemistry, General .....	8 hr.
College Algebra .....	3 hr.	Chemistry, Organic .....	8 hr.
Trigonometry .....	3 hr.	Physics .....	8 hr.
Principles of Economics .....	6 hr.	Electives* .....	18 hr.
Biology, General .....	8 hr.		
		TOTAL.....	68 hr.

\*Electives must be designed to satisfy University Core Curriculum requirements. Electives: Core Group A-12 hr.; Core Group B 6 hr.

*University Core Curriculum Group A* includes: Art, English (exclusive of English I and 2), Humanities, Languages, Music, Philosophy, Religious Studies, Selected Multidisciplinary Studies, Speech Communication, and Theatre.

*University Core Curriculum Group B* includes: Forestry 140, Geography, History, Minerals 97 Political Science, Psychology, Selected Multidisciplinary Studies, Social Science, Sociology and Anthropology, and Economics (for Pharmacy students, Group B Economics would include economics electives beyond the 6-hr. required courses).

*Because limited openings are available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

Admissions are competitive and are based on cumulative academic average and science average achieved in all prior college courses, a personal interview, and results of the Pharmacy College Admission Test (PCAT).

For admission to the School of Pharmacy, formal application should be made to the Committee on Admissions of the School of Pharmacy as early as possible after January 1, but before April 1, preceding the Fall term (first semester) in which the student is seeking enrollment. Formal applications received after the April 1 deadline will be considered only when vacancies exist.

Applicants should write to Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, which will furnish official blanks on which formal application must be made.

A \$10.00 application fee is required and must accompany the application.

Each applicant is expected to deposit \$50.00 before the applicant's name is entered upon the official list of those accepted by the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is forfeited.

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

Complete information may be obtained from the Dean of the School of Pharmacy, or from the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

## Pharmacy College Admission Test

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from your pre-pharmacy adviser, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 304 East 45th St., New York, NY 10017.

## Personal Interview

A personal interview with the Committee on Admissions will be required. Interviews will be held at the WVU Medical Center and will be arranged as far as possible to suit the convenience of the applicant. Interviews are scheduled during February, March, and April. Only applicants with a cumulative and science average above 2.5 will be called for an interview, unless openings are available.

## Admission to Advanced Standing

If space is available, students from other accredited schools of pharmacy may be admitted provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 grade-point average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses will not be transferred.

## Student Status and Advancement

The determination of student status is in the hands of the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of the Dean. In the School of Pharmacy, all grades, except W, WU, P, and X, are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average in professional subjects. An F grade, or failure to attain a 2.0 average in any semester, will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second professional year must petition the Committee on Academic Standards for advancement to the third professional year. Any student on probation at the beginning of the second semester second professional year, or who qualifies for probation at the end of that semester, shall not be eligible for summer clerkships.

Any first-professional-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-professional-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 14 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

## Special Requirements

All students satisfactorily completing the first professional year must obtain professional liability insurance before being allowed to begin the second professional year. Professional liability insurance will be continuously maintained in effect through completion of the third professional year. Failure to have the liability insurance will result in the students' not being allowed to enroll in required courses.

Students in the first professional year will be required to obtain an Intern Certificate from the West Virginia Board of Pharmacy, and to maintain it through completion of the third professional year.

During the second professional year, students will be informed of their assigned schedules for the third professional year's required clinical clerkships. Students will also be informed as to the West Virginia community or communities in which they will reside during these clerkships, the names of their preceptors, and the dates of attendance. The school will provide the student opportunity to participate in choice of assignments, but it reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying clerkship requirements. A maximum of 24 students will be assigned to the clerkship session during any term (e.g., summer, fall, or spring). Only 8 students will be assigned to each required clerkship during any given four-week period. In the event of over-subscription to any clerkship period or clerkship rotation, priority will be assigned on the basis of grade-point average attained while a full-time student in the School of Pharmacy.

## Requirements for Degree

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

## Course Changes

A student who desires to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission of such change from the Dean.

## Curriculum

Students who have been enrolled in the School of Pharmacy after August, 1975, must complete the School of Pharmacy Curriculum Plan (or modifications of this plan).

### SCHOOL OF PHARMACY CURRICULUM PLAN

#### First Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Bioch. 139—Gen. Biochem . . . . .	4	M. Bio. 220—Microbiology . . . . .	4
Anat. 101—Hum. Anat. . . . .	3	Phar. 203—Concepts. Phar. II . . . . .	4
Physi. 241—Mech. Body Funct. . . . .	4	Phar. 228—Phar. Pract. Leg. Env . . . . .	4
Phar. 200—Prep. Phar. Pract. . . . .	2	Phar. 240—Phar. & Ther. I . . . . .	4
Phar. 201—Concepts Phar. I . . . . .	4	Phar. 241—Fund. Pathophys. . . . .	4
Phar. 227—Phar. Soc. Env. . . . .	2		
	<u>19</u>		<u>19</u>



## Second Professional Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Pcol. 242—Phar. & Ther. II .....	6	Phar. 205—Phar. Pract. ....	4
Phar. 204—Concepts Phar. III .....	4	Phar. 230—Prof. Asp. Phar. ....	3
Phar. 207—Intro. to Drug Lit. ....	1	Phar. 244—Phar. & Ther. III .....	5
Pcol. 229—Man, Asp. Phar. Pract. ....	3	Phar. 260—Princ. Med .....	2
Phar. 243—Chem. Immu. Agts. ....	3	Electives .....	2-4
Electives .....	1-3		
	17-20		16-18

## Third Professional Year

<i>First Session (Summer)</i>	<i>Hr.</i>	<i>Second Session (First Sem.)</i>	<i>Hr.</i>
Phar. 250—Amb. Care Clerk .....	4	Phar. 250, 251, 252, and 253	
Phar. 251—Med. Team Clerk .....	4	(See First Session .....	16
Phar. 252—Inst. Care Clerk .....	4	or	
Phar. 253—Elect. Clerk .....	4	Electives .....	16
	16	or	
		Free Session	

or  
Free Session

<i>Third Session (Second Sem.)</i>	<i>Hr.</i>
Phar. 250, 251, 252, and 253 .....	16
or	
Electives .....	16
or	
Free Session	

## Graduate Programs

### Pharmaceutical Sciences

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

#### Admission

Applicants for admission must satisfy the general requirements for admission to the WVU Graduate School. The applicant must possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences. In addition, graduate record examination scores in the verbal, quantitative, and analytical portions of the examinations are required from all students, and TOEFL, or similar scores, are required of foreign students.

#### Academic Standards

No credits are acceptable toward a graduate degree with a grade lower than a C. The graduate student must have a cumulative grade-point average of at least 3.0 in all graduate courses to qualify for the degrees.

## Master of Science (M.S.)

The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmacognosy, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceutics, biopharmaceutics, and pharmacokinetics.

### Requirements for M.S. Degree

To be eligible for the M.S. degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis.

Upon completion of the course work and research requirements, and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

## Doctor of Philosophy (Ph.D.)

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry, pharmaceutics/biopharmaceutics/pharmacokinetics, and behavioral and administrative pharmacy.

### Requirements for Ph.D. Degree

The student's first semester is usually occupied with course work while he or she is under the guidance of an assigned interim committee. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S. en route to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student, with committee advice, may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S., except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted to the Graduate School by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted for candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

## Courses of Instruction in Pharmacy

Professors Baldwin, Lim, Malanga, O'Connell, and Wojcik; Associate Professors Brister, Covington, Howard, Jacknowitz, Ma, Mauger, Miller, O'Donnell, Riley, and Stratford; Assistant Professors Berger, Hoy, Ponte, Proveaux, and Steiner; Clinical Associate Professor Lowe; Clinical Assistant Professors Hilligoss, McNeil, and Miles; Visiting Assistant Professor Suzuki, Lecturers Gill and Sensabaugh; Adjunct Associate Professor Glover; Adjunct Assistant Professors Cunningham and Harper; Clinical Instructors Anderson, Anile, Bailey, Bartsch,

Bovenizer, Calemene, Caplan, Comm, Corkrean, Crawford, Criss, DeBone, Deem, Doyle, Egan, Flanagan, Fruth, Gastineau, Gianettino, Goodykoontz, Grant, Grittith, Griffiths, Hickman, Holmes, Jarvis, Johnson, Johnston, Jones, F. Judy, S. Judy, Lang, Lindsay, Lusk, Martin, Matheny, Meredith, Midcap, Miller, Muha, Pierce, Plummer, Plyburn, Prettyman, Ritchie, Robinson, Scott, Shaw, Slaven, Smith, Stanley, Stout, Taylor, Tonkovich, Toompas, Turk, VanMeter, Wells, Zicafoose, and Ziolkowski.

## Pharmacy (Phar.)

200. *Preparation for Pharmacy Practice*. I. 2 hr. PR: First-year pharmacy student or consent. A study of pharmaceutical calculations, pharmaceutical literature, and an overview of pharmacy practice.
201. *Concepts in Pharmaceutics I*. I. 4 hr. PR: First-year pharmacy student or consent. A discussion of introductory material in the practice of pharmacy and a discussion of the concepts underlying solution dosage forms.
203. *Concepts in Pharmaceutics II*. II. 4 hr. PR: Phar. 201. Basic principles of formulation, *in vitro* evaluation and bioavailability implications of pharmaceutical dosage forms represented by solids and polyphasic systems. Includes small- and large-scale processing of tablets, capsules, suspensions, emulsions and suppositories.
204. *Concepts in Pharmaceutics III*. I. 4 hr. PR: Second-year standing in pharmacy or consent. Special dosage forms, quality control, and drug dosage regimens of pharmaceutical formulations and their conformity with F.D.A. regulations and good manufacturing practices.
205. *Pharmacy Practice*. II. 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.
207. *Introduction to Drug Literature*. I. 1 hr. PR: Second-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.
211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile dosage forms. 2 hr. lec., 3 hr. lab.
212. *Non-Prescription Drugs*. I. 3 hr. PR: Second-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
- 213/300. *Industrial Pharmacy*. II. 4 hr. PR: Phar. 204 or graduate standing. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
- 214/314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
- 215/315. *Physical Pharmacy*. II. 3 hr. PR: First-year standing in pharmacy or consent. Designed to illustrate the special application of physiochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. I. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.



227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.
229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I. 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
240. *Pharmacodynamics and Therapeutics I*. II. 4 hr. PR: First-year standing in pharmacy or consent. Consolidation of pharmacologic and medicinal chemical principles underlying mechanisms of drug action and the therapeutic applications of these pharmacodynamic principles in the management of disease states.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
242. *Pharmacodynamics and Therapeutics II*. I. 6 hr. PR: Phar. 240 or consent. Continuation of Phar. 240.
243. *Chemotherapeutic and Immunobiologic Agents*. I. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.
244. *Pharmacodynamics and Therapeutics III*. II. 5 hr. PR: Pcol. 242 or consent. Continuation of Pcol. 242.
249. *Drugs and Medicines*. I. 3 hr. (Not intended for pharmacy majors.) PR: General biology or consent. Physiology and organic chemistry suggested. A course intended to introduce the nonhealth professional student to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.
250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will participate on a health care team in an inpatient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Extensive experience will be gained in the practice of pharmacy in institutional centers with emphasis on the pharmacist's relationship with institutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Therapeutics*. I. 3 hr. PR: Phar. 244 or equiv., and consent. A discussion and integration of pharmacological-therapeutic concepts in the study of problems which may be encountered by the pharmacist in drug management of selected disease states.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.

272. *Medicinal Chemistry*. I. 3 hr. PR: Consent.
276. *Pharmaceutical Quality Control*. I. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present. (*Course will not be offered in 1981-82.*)
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies. (*Course will not be offered in 1981-82.*)
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S 1-3 hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacognosy, or pharmacy.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
302. *Advanced Pharmaceutics*. I or II. 3 hr. Physiochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.
320. *Drug Regulation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.
321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.
323. *Economics of the Pharmaceutical Industry*. I or II. 3 hr. History, background, and formation of major drug industries, oligopolistic practices, mergers, combines, costs of research, and production.
340. *Organic Plant Constituents*. I or II. 3 hr. Occurrence, properties, biogenesis, etc. of a number of classes of organic compounds derived from plants. Emphasis on secondary metabolites which contain products of pharmaceutical or medicinal interest. (*Course will not be offered in 1981-82.*)
341. *Isolation of Plant Constituents*. I or II. 3-5 hr. Acquaints the student with techniques used in extraction, separation, and isolation of plant constituents. (*Course will not be offered in 1981-82.*)
370. *The Synthesis of Drugs*. I, II, S. 3 hr. PR: Chem. 332 and consent. A survey of the approaches employed in the synthesis of a variety of examples of pharmacologically useful agents. Emphasis is placed on retrosynthetic analysis of target molecules and the application of synthetic procedures to multistep syntheses.
375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of Phar. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.
377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.
390. *Special Topics*. I, II. 1-4 hr.

- 391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. Presentation and discussion of special topics and research in the pharmaceutical sciences.
- 396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
- 491. *Advanced Study*. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
- 496. *Graduate Seminar*. 1 hr. PR: Consent. It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of the student's program.
- 497. *Research*. 1-15 hr.
- 498. *Thesis*. 2-4 hr. PR: Consent.



# Faculty and Staff

Gene A. Budig, Ed.D., *President*.  
B. A. Nugent, Ph.D., *Vice-President for Academic Affairs*.  
Charles E. Andrews, M.D., *Vice-President for Health Sciences*.  
Raymond M. Haas, D.B.A., *Vice-President for Administration*.  
Ray Koppelman, Ph.D., *Vice-President for Energy Studies, Graduate Programs, and Research*.  
George D. Taylor, Ed.D., *Vice-President for Student Affairs*.  
Harold J. Shamberger, M.P.A., *Executive Officer*.  
Henry D. Collins, J.S.D., *Assistant to the President*.  
Harry W. Ernst, M.S.J., *Assistant to the President for Public Affairs*.  
Marion F. Dearnley, J.D., *Special Assistant to the President and Coordinator of Equal Employment Opportunity and Affirmative Action Affairs*.

## Medical Center

*Charleston Division*, Thomas W. Mou, M.D., *Dean*.  
*Dentistry*, W. Robert Biddington, D.D.S., *Dean*.  
*Medicine*, John E. Jones, M.D., *Dean*.  
*Nursing*, Lorita D. Jenab, Ed.D., *Dean*.  
*Pharmacy*, Frank D. O'Connell, Ph.D., *Acting Dean*.  
*University Hospital*, Eugene L. Staples, M.H.A., *Administrator*.

## School of Dentistry

Joseph Abrams, D.D.S. (U. Louisville), *Clinical Assistant Professor of Community Dentistry*.  
John D. Adams, D.D.S. (U. Pitt), *Professor Emeritus of Fixed Prosthodontics*.  
Camillo A. Alberico, D.D.S. (Marquette U.), *Assistant Dean; Professor of Endodontics*.  
Lester H. Bakos, D.D.S. (WVU), *Assistant Professor of Hospital Dentistry*.  
Elise Bassin, D.M.D. (U. Penn), *Assistant Professor of Pediatric Dentistry*.  
Jack H. Baur, Jr., D.D.S. (WVU), *Clinical Instructor (part-time) in Endodontics*.  
Arthur J. Beaumont, Jr., D.D.S. (WVU), *Clinical Instructor in Prosthodontics and Endodontics*.  
William P. Bennett, D.D.S. (WVU), *Clinical Instructor (part-time) in Operative Dentistry*.  
Henry J. Bianco, Jr., D.D.S. (U. Md.), *Professor and Chairperson of Prosthodontics*.  
W. Robert Biddington, D.D.S. (U. Md.), *Dean; Professor of Endodontics*.  
Byron H. Black, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry, Charleston Division*.  
Joseph J. Bonello, D.D.S. (U. Pitt), *Clinical Associate Professor (part-time) of Orthodontics*.  
Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor and Chairperson of Oral Pathology*.  
Dale C. Bowers, D.D.S. (Ohio St. U.), *Associate Professor of Oral Diagnosis and Radiology*.  
James L. Bramble, D.D.S. (WVU), *Clinical Instructor (part-time) in Prosthodontics*.  
Stephen D. Bucklew, D.D.S. (WVU), *Clinical Instructor in Community Dentistry*.  
Thomas C. Cady, LL.M. (U. Tex.), *Lecturer (part-time) in Dental Jurisprudence*.  
Anthony L. Camele, D.D.S. (WVU), *Clinical Instructor (part-time) in Prosthodontics*.  
John L. Campbell, D.D.S. (Ind. U.), *Professor Emeritus of Oral Surgery*.  
Minter L. Chapman, D.D.S. (WVU), *Clinical Associate Professor (part-time) of Operative Dentistry*.  
Damon E. Coffman, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry*.  
Myles I. Cogan, D.D.S. (U. Tex.), *Clinical Instructor in Oral Surgery*.  
Robert J. Conner, Jr., D.D.S. (WVU), *Associate Professor of Fixed Prosthodontics*.  
H. Lee Courtney, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry*.  
Sharon M. Crowder, D.D.S. (WVU), *Instructor in Fixed Prosthodontics*.  
Donald Davidson, D.D.S. (U. Buffalo), *Clinical Associate Professor (part-time) of Oral Surgery*.  
Christina DeBiase, M.A. (WVU), *Assistant Professor of Dental Hygiene*.  
Leo F. DeCounter, D.D.S. (U. Iowa), *Professor of Removable Prosthodontics*.  
John Dempsey, D.D.S. (U. Md.), *Clinical Assistant Professor (part-time) of Orthodontics*.  
Gerald Dice, D.D.S. (Ohio St. U.), *Clinical Assistant Professor of Community Dentistry*.  
Peter H. Fagan, D.D.S. (Loyola U., Chi.), *Clinical Instructor in Hospital Dentistry*.  
Frederick P. Farris, D.D.S. (U. Md.), *Clinical Instructor in Hospital Dentistry*.  
Sanford J. Fenton, D.D.S. (NYU), *Associate Professor of Pediatric Dentistry*.  
David C. Fogarty, D.D.S. (WVU), *Clinical Associate Professor (part-time) of Oral Surgery*.  
James R. Foor, D.D.S. (WVU), *Assistant Professor of Operative Dentistry*.  
Pete G. Fotos, D.D.S. (WVU), *Assistant Professor of Oral Diagnosis and Radiology*.  
John W. Frye, D.D.S. (WVU), *Clinical Associate Professor (part-time) of Operative Dentistry*.  
David C. Funderburk, D.D.S. (WVU), *Clinical Instructor (part-time) in Endodontics*.

Galvin J. Gaver, D.D.S. (U. Md.), *Professor of Operative Dentistry.*  
 Stephen C. Gladwin III, D.D.S. (Ohio St. U.), *Assistant Professor of Operative Dentistry.*  
 Douglas Gnepp, M.D. (Duke U.), *Instructor (part-time) in Oral Pathology.*  
 William L. Graham, D.D.S. (U. Md.), *Assistant Dean; Professor and Chairperson of Oral Diagnosis and Radiology.*  
 Catherine E. Graves, M.A. (WVU), *Assistant Professor of Dental Hygiene.*  
 Robert W. Graves, D.D.S. (WVU), *Professor and Chairperson of Oral Surgery.*  
 James A. Griffin, D.D.S. (Baylor U.), *Professor of Endodontics.*  
 Geoffrey A. Gwynn, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Pediatric Dentistry.*  
 James D. Haddox, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry.*  
 Joseph D. Hancock, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry.*  
 George W. Harper, D.D.S. (WVU), *Assistant Professor of Removable Prosthodontics.*  
 Richard I. Hart, D.D.S. (U. Mich.), *Assistant Professor of Operative Dentistry.*  
 David M. Hickman, D.D.S. (WVU), *Assistant Professor of Dental Practice Management.*  
 Robert H. Hornbrook, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Periodontics.*  
 Jack G. Hutton, Jr., Ph.D. (U. Conn.), *Visiting Educational Specialist.*  
 Barbara Ingersoll, Ph.D. (Penn St. U.), *Associate Professor of Community Dentistry.*  
 Kent E. Jackfert, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Hospital Dentistry, Charleston Division.*  
 Charles R. Jackson, D.D.S. (WVU), *Assistant Professor of Operative Dentistry.*  
 S. N. Jagannathan, Ph.D. (U. Bombay), *Associate Professor of Community Dentistry.*  
 Avia Kaplan, M.S. (Boston U.), *Associate Professor of Dental Hygiene.*  
 Richard C. Kelly, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Operative Dentistry.*  
 Gordon G. Keyes, D.D.S. (U. Md.), *Associate Professor of Oral Pathology.*  
 Darryl R. King, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Oral Surgery.*  
 Edward Klein, D.D.S. (U. Pitt), *Clinical Instructor in Hospital Dentistry.*  
 Edwin V. Kluth, D.D.S. (Case West. Res. U.), *Associate Professor of Maxillofacial Prosthodontics.*  
 Barbara K. Komives, M.S. (Ohio St. U.), *Associate Professor and Chairperson of Dental Hygiene.*  
 Marcia Krouse, M.S. (U. Ky.), *Assistant Professor of Dental Hygiene.*  
 Lonnie Kuhn, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 Stephen J. Kwiatkowski, D.D.S. (WVU), *Associate Professor of Fixed Prosthodontics.*  
 Gregory A. Lacy, D.D.S. (WVU), *Clinical Instructor (part-time) in Removable Prosthodontics.*  
 Claude R. Lee, D.M.D. (U. Ky.), *Clinical Instructor in Hospital Dentistry.*  
 Young Jai Lee, D.D.S. (U. Korea), *Assistant Professor of Maxillofacial Prosthodontics.*  
 Frank J. Lopez, D.D.S. (WVU), *Assistant Professor of Dental Practice Management.*  
 William R. McCutcheon, D.D.S. (WVU), *Professor and Chairperson of Community Dentistry.*  
 Roberta McGregor, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Pediatric Dentistry.*  
 Elizabeth A. McLellan, B.S. (WVU), *Instructor in Dental Hygiene.*  
 Hubert E. Martin, D.D.S. (U. Pitt), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Richard L. Meckstroth, D.D.S. (Loma Linda U., Cal.), *Assistant Professor of Community Dentistry.*  
 William W. Merow, D.D.S. (U. Md.), *Professor and Chairperson of Orthodontics.*  
 Lynn S. Miner, B.S. (U. Pitt), *Instructor in Dental Hygiene.*  
 Paul F. Mitchell, D.M.D. (N.J. C.), *Assistant Professor of Hospital Dentistry and Dental Practice Management, Charleston Division.*  
 Robert N. Moore, D.D.S. (Northwestern U.), *Associate Professor of Orthodontics.*  
 Wilbur D. Moorman, D.D.S. (Va. Cwealth U.), *Clinical Professor of Hospital Dentistry.*  
 Donald J. Morrison, D.D.S. (U. Iowa), *Professor and Chairperson of Periodontics.*  
 Robert L. Murphy, M.S. (Cath. U. Am.), *Adjunct Associate Professor of Community Dentistry.*  
 David A. Nash, D.M.D. (U. Ky.), *Professor and Chairperson of Pediatric Dentistry.*  
 Gary G. Naylor, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Operative Dentistry.*  
 Leslie E. Nicholson, D.D.S. (WVU), *Clinical Instructor (part-time) in Pediatric Dentistry.*  
 Linda S. Oliver, D.D.S. (U. Md.), *Clinical Instructor (part-time) in Periodontics.*  
 Franklin Oliverio, D.D.S. (U. Md.), *Clinical Assistant Professor (part-time) of Oral Surgery.*  
 James E. Overberger, D.D.S. (U. Pitt), *Associate Dean; Professor of Dental Materials.*  
 Donald E. Pathhoff, D.D.S. (U. Detroit), *Clinical Instructor in Hospital Dentistry.*  
 Robert Pawlicki, Ph.D. (York U.), *Adjunct Associate Professor of Community Dentistry.*  
 James L. Payne, D.D.S. (U. Mo.), *Clinical Instructor in Hospital Dentistry.*  
 Robert G. Pifer, D.D.S. (WVU), *Associate Professor of Oral Diagnosis and Radiology.*  
 David T. Puderbaugh, D.D.S. (WVU), *Professor and Chairperson of Dental Practice Management.*  
 William F. Queen, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Fixed Prosthodontics.*  
 Vernon Rodeffer, D.D.S. (U. Md.), *Assistant Professor of Operative Dentistry.*  
 Jack A. Roth, D.D.S. (U. Md.), *Assistant Professor of Removable Prosthodontics.*  
 Richard A. Salzer, D.M.D. (U. Penn), *Clinical Assistant Professor of Hospital Dentistry.*

Robert E. Sausen, D.D.S. (U Minn.), *Professor and Chairperson of Operative Dentistry.*  
 Donald T. Sauter, D.D.S. (Ohio St. U.), *Clinical Instructor (part-time) in Prosthodontics.*  
 Carol A. Sherrill, M.S. (U. Mich.), *Associate Professor of Dental Hygiene.*  
 A. Eddy Skidmore, D.D.S. (WVU), *Professor and Chairperson of Endodontics.*  
 Homer W. Smith, D.D.S. (WVU), *Associate Professor of Oral Diagnosis and Radiology.*  
 Norton P. Smith, D.D.S. (WVU), *Instructor in Fixed Prosthodontics.*  
 James M. Snyder, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 Joseph M. Stacy, D.D.S. (WVU), *Clinical Instructor in Periodontics.*  
 Charles J. Stewart, D.D.S. (WVU), *Instructor in Endodontics.*  
 Avis D. Stuart, M.A. (WVU), *Adjunct Instructor in Dental Hygiene.*  
 Lawrence E. Syner, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry.*  
 Andrew J. Tatich, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Nancy E. Taylor, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 William C. Taylor, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry.*  
 James G. Thomas, D.D.S. (Temple U.), *Professor of Oral Diagnosis and Radiology.*  
 Harold E. Tucker, D.D.S. (Va. Cwealth U.), *Professor of Fixed Prosthodontics.*  
 LeRoy J. Utt, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Operative Dentistry.*  
 James E. Valentine, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Edmond G. VandenBosche, D.D.S. (U. Md.), *Associate Professor of Operative Dentistry.*  
 Alfred VanRiper, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Removable Prosthodontics.*  
 Joseph E. Van Sickels, D.D.S. (Va. Cwealth. U.), *Assistant Professor of Oral Surgery.*  
 David H. Walker, D.D.S. (WVU), *Associate Professor of Dental Practice Management, Charleston Division.*  
 Robert L. Wanker, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Periodontics.*  
 William A. Weaver, D.D.S. (Ohio St. U.), *Associate Professor of Operative Dentistry.*  
 John T. Welch, D.D.S. (U. Md.), *Professor and Chairperson of Hospital Dentistry.*  
 Stephen G. Wilbourn, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 John B. Wilfong, D.D.S. (Ohio St. U.), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 John A. Wilson, D.D.S. (Ohio St. U.), *Clinical Associate Professor of Community Dentistry.*  
 Michael A. Wilson, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Oral Surgery.*  
 William M. Wine, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry.*

## School of Medicine

Fouad Hassan Abdalla, M.D. (Alexandria U., Egypt), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Ernest L. Abernathy, M.D. (Emory U.), *Clinical Professor of Pathology.*  
 Henry L. Abrons, M.D. (Case West. Res. U.), *Adjunct Instructor in Medicine (Pulmonary).*  
 Ali F. AbuRahma, M.B.Ch. (Alexandria U., Egypt), *Clinical Assistant Professor of Surgery.*  
 Francis Adams, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy.*  
 Farooq P. Agha, M.D. (King Edward Med. C.), *Associate Professor of Radiology (Diagnostic).*  
 Margaret J. Albrink, M.D. (Yale U.), *Professor of Medicine (Metabolism-Endocrinology).*  
 Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), *Professor of Pathology.*  
 Gabriel Al-Hajj, M.D. (Am. U. Beirut), *Clinical Assistant Professor of Surgery.*  
 Joel Allen, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Phillip J. Alt, M.S. (WVU), *Instructor in Otolaryngology.*  
 Ralph S. Amato, M.D. (U. Neb.), *Associate Professor of Pediatrics.*  
 Federico L. Ampil, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Edwin L. Anderson, M.D. (U. S.C.), *Assistant Professor of Pediatrics, Charleston Division.*  
 Roger W. Anderson, M.D. (WVU), *Adjunct Instructor in Otolaryngology.*  
 Warren T. Anderson, M.D. (Temple U.), *Clinical Associate Professor of Medicine (Cardiology).*  
 Charles E. Andrews, M.D. (Boston U.), *Professor of Medicine (Pulmonary); Vice-President for Health Sciences.*  
 Vicente Anido, M.D. (Havana U.), *Professor Emeritus of Pathology (Clinical).*  
 Dominic A. Antico, M.D. (U. Chi.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Michael Arbitman, M.D. (U. Louisville), *Clinical Associate Professor of Radiology (Diagnostic).*  
 James G. Arbogast, M.D. (WVU), *Assistant Professor of Family Practice.*  
 Jerome Arnett, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary).*  
 Don L. Arnwine, M.H.A. (Northwestern U.), *Clinical Associate Professor of Community Medicine.*  
 Steven A. Artz, M.D. (Syracuse U.), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*  
 Muhammad Ashraf, M.B.B.S. (King Edward Med. C.), *Assistant Professor of Obstetrics and Gynecology.*  
 Michael D. Attfield, (Edinburgh U.), *Adjunct Instructor in Community Medicine.*



Bipinchandra M. Avashia, M.B.B.S. (Med. C., Baroda), *Clinical Assistant Professor of Medicine (Pulmonary Medicine)*.

Michael D. Avington, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology)*.

Frank J. Ayd, M.D. (U. Md.), *Clinical Professor of Behavioral Medicine and Psychiatry*.

Moustassem Ayoubi, M.D. (Damascus U.), *Clinical Assistant Professor of Pediatrics*.

Robert W. Azar, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology*.

Albert J. Azzaro, Ph.D. (WVU), *Associate Professor of Neurology and Pharmacology and Toxicology*.

Ronald C. Backer, Ph.D. (U. Ariz.), *Adjunct Assistant Professor of Pharmacology and Toxicology*.

Sheldon R. Baker, Ed.D. (Case West. Res. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Prakash C. Bangani, M.B.B.S. (Med. C., Indore), *Clinical Assistant Professor of Orthopedic Surgery*.

Daniel E. Banks, M.D. (Wayne St. U.), *Adjunct Instructor in Medicine (Pulmonary Medicine)*.

Carl C. Barger, M.D. (Med. C. Va.), *Clinical Associate Professor of Radiology (Diagnostic)*.

Carolyn E. Barnes, Ph.D. (U. Pitt), *Assistant Professor of Physical Therapy*.

Dilip K. Basu, M.B.B.S. (U. Calcutta), *Clinical Assistant Professor of Medicine (Comprehensive Medicine)*.

Mildred Mitchell-Bateman, M.D. (Wom. Med. C. Pa.), *Clinical Professor of Behavioral Medicine and Psychiatry*.

John J. Battaglini, M.D. (Med. C. Va.), *Clinical Assistant Professor of Obstetrics and Gynecology*.

Michael A. Bauer, M.D. (U. Chicago), *Adjunct Instructor in Medicine (Pulmonary Medicine)*.

Kamal M. Behnam, M.D. (U. Cairo), *Clinical Associate Professor of Obstetrics and Gynecology*.

Soad Bekheit-Saad, M.D. (U. Cairo), Ph.D. (Queen's U., Belfast), *Associate Professor of Medicine (Cardiology)*.

John A. Belis, M.D. (Jeff. Med. C.), *Assistant Professor of Urology*.

Ross O. Bell, M.D. (U. Penn), *Clinical Associate Professor of Pathology*.

William A. Beresford, Ph.D. (Oxford U.), *Professor of Anatomy*.

Stuart K. Bergman, M.D. (Geo. Wash. U.), *Clinical Assistant Professor of Anesthesiology*.

Robert S. Bernstein, Ph.D. (Penn St. U.), M.D. (U. Conn.), *Adjunct Assistant Professor of Community Medicine*.

Bruce L. Berry, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology*.

Robert Bettinger, M.D. (Med. C. Va.), *Assistant Professor of Anesthesiology*.

J. David Blaha, M.D. (U. Mich.), *Assistant Professor of Orthopedic Surgery*.

James B. Blair, Ph.D. (U. Va.), *Associate Professor of Biochemistry*.

James E. Bland, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology*.

Donald M. Blatchley, M.D. (Jeff. Med. C.), *Clinical Professor Emeritus of Medicine (Dermatology)*.

Nancie A. Blehschmidt, B.S. (WVU), *Instructor in Medicine (Metabolism-Endocrinology) and Medical Technology*.

Larry D. Blessing, M.D. (U. Mo.), *Assistant Professor of Medicine (Gastroenterology)*.

Robert C. Bock, M.D. (U. Louisville), *Clinical Associate Professor of Surgery*.

Wayne G. Bodenheimer, Ph.D. (U. Pitt), *Clinical Assistant Professor of Otolaryngology*.

Brian Boehlecke, M.D. (SUNY—Buffalo), *Adjunct Associate Professor of Medicine (Pulmonary Medicine)*.

James P. Boland, M.D. (Jeff. Med. C.), *Professor and Chief of Surgery, Charleston Division*.

Walter A. Bonney, Jr., M.D. (Columbia U.), *Clinical Professor of Obstetrics and Gynecology*.

Beverly R. Born, B.S. (WVU), *Clinical Instructor in Physical Therapy*.

Susan P. Borsuk, B.S. (U. Md.), *Clinical Instructor in Physical Therapy*.

Edward M. Bosanac, M.S. (U. Pitt), *Assistant Professor of Community Medicine*.

Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor of Pathology*.

Mohammed M. Boustany, M.D. (Damascus U.), *Clinical Assistant Professor of Surgery*.

K. Douglas Bowers, Jr., M.D. (Jeff. Med. C.), *Clinical Associate Professor of Orthopedic Surgery*.

Carole Brooks Boyd, M.D. (Wayne St. U.), *Associate Professor of Pathology*.

Bert E. Bradford, Jr., M.D. (Wash. U.), *Clinical Professor Emeritus of Surgery*.

Joseph E. Bradley, B.S. (WVU), *Clinical Instructor in Physical Therapy*.

Nancy K. Brallier, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.

Eric P. Brestel, M.D. (U. Fla.), *Assistant Professor of Medicine (Allergy and Clinical Immunology); Physician, University Health Service*.

Arlo P. Brooks, Jr., M.D. (WVU), *Clinical Associate Professor of Family Practice*.

John W. Brough, Dr.P.H. (U. N.C.), *Adjunct Assistant Professor of Community Medicine*.

Paul B. Brown, Ph.D. (U. Chicago), *Associate Professor of Physiology.*

James Bryant, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*

Jeffrey A. Buck, Ph.D. (Kent St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Dennis L. Burech, M.D. (Ohio St. U.), *Clinical Associate Professor of Pediatrics.*

Sandy L. Burkart, Ph.D. (WVU), *Director and Associate Professor of Physical Therapy.*

Arnold C. Burke, M.D. (U. Ala.), *Clinical Assistant Professor of Family Practice.*

David B. Burr, Ph.D. (U. Colo.), *Assistant Professor of Anatomy and Orthopedic Surgery.*

Robert G. Burrell, Ph.D. (Ohio St. U.), *Professor of Microbiology.*

Fred R. Butcher, Ph.D. (Ohio St. U.), *Professor and Acting Chairperson of Biochemistry.*

Roy L. Butcher, Ph.D. (Iowa St. U.), *Professor of Obstetrics and Gynecology.*

Andrew K. Butler, M.D. (Rush Med. C.), *Clinical Professor of Radiology.*

John W. Byrd, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*

Bobby L. Caldwell, M.D. (Bowman Gray Sch. Med.), *Clinical Professor of Pathology.*

Edward J. Callahan, Ph.D. (U. Vt.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

George R. Callender, M.D. (U. Md.), *Clinical Assistant Professor of Orthopedic Surgery.*

Margaret Calvert, B.S., Cert. PT (U. Del.), *Clinical Instructor in Physical Therapy.*

William J. Canady, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry.*

James Capage, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Amelia Jean Cardo, M.D. (N.J. Sch. Med.), *Clinical Assistant Professor of Radiology (Diagnostic).*

Mark L. Carlson, M.D. (U. Nebr.), *Adjunct Assistant Professor of Community Medicine.*

Billy Ray Carlton, Ed.D. (U. Tenn.), *Adjunct Associate Professor of Community Medicine.*

Stephen W. Carmichael, Ph.D. (Tulane U.), *Associate Professor of Anatomy.*

Marshall J. Carper, M.D. (Med. C. Va.), *Professor and Chief of Family Practice, Charleston Division.*

James F. Carruth, Ph.D. (U. Ill.), *Clinical Professor of Behavioral Medicine and Psychiatry.*

Donald C. Carter, M.D. (U. Nebr.), *Professor of Behavioral Medicine and Psychiatry.*

William H. Carter, M.D. (U. Va.), *Clinical Professor of Medicine (Comprehensive Medicine).*

Robert M. Castellani, M.D. (Brown U.), *Adjunct Instructor in Community Medicine and Pulmonary Medicine.*

John N. Casto, M.D. (WVU), *Clinical Instructor in Family Practice.*

Vincent Castranova, Ph.D. (WVU), *Adjunct Assistant Professor of Physiology.*

Leonidas Castro, M.D. (Nat'l. U. Colombia), *Clinical Professor of Radiology (Radiation Therapy).*

Carl H. Cather, Jr., M.D. (Harvard U.), *Clinical Associate Professor of Otolaryngology.*

Carrel M. Caudill, M.D. (Duke U.), *Clinical Professor of Neurological Surgery.*

Jose A. Celis, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Urology.*

Graciano E. Cendana, M.D. (U. St. Thomas), *Clinical Associate Professor of Pathology.*

Louis S. Chaldares, M.D. (WVU), *Adjunct Instructor in Anesthesiology.*

John T. Chambers, M.D. (Case West. Res. U.), *Clinical Professor of Obstetrics and Gynecology.*

Cheng-Tien Chang, Ph.D. (SUNY), *Assistant Professor of Radiology (Radiation Safety).*

William W. L. Chang, M.D. (Nat'l. Taiwan U.), *Associate Professor of Pathology.*

Jacques Charbonniez, M.D. (French U.), *Clinical Associate Professor of Surgery.*

Nyles Charon, Ph.D. (U. Minn.), *Associate Professor of Microbiology.*

Toa Seng Chen, Ph.D. (U. Tex.), *Assistant Professor of Radiology (Radiation Safety).*

Shi-Ming (Samuel) Chou, M.D. (Nat'l. Taiwan U.), Ph.D. (U. Wisc.), *Professor of Pathology, Neurology, and Neurological Surgery.*

Louise Christensen, B.S. (WVU), *Clinical Instructor in Physical Therapy.*

Thomas E. Chvasta, M.D. (U. Pitt), *Clinical Associate Professor of Medicine (Gastroenterology).*

Joseph A. Cipic, M.D. (U. Pitt), *Clinical Assistant Professor of Otolaryngology.*

Thomas S. Clark, M.D. (WVU), *Clinical Instructor in Family Practice.*

John P. Claude, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Paul L. Clausell, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry.*

David A. Clayman, Ph.D. (U. Vt.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Robert C. Cody, M.A. (U. Iowa), *Associate Professor of Otolaryngology.*

Brenda K. Colasanti, Ph.D. (WVU), *Professor of Ophthalmology and Pharmacology and Toxicology.*

Howard D. Colby, Ph.D. (SUNY), *Professor of Physiology.*

David F. Colvin, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine).*

Philip E. Comer, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Janice W. Cone, M.S. (U. Denver), *Associate Professor of Behavioral Medicine and Psychiatry.*

Francis W. Conley, M.D. (U. Iowa), *Clinical Associate Professor of Medicine (Comprehensive Medicine)*.

Fredrick A. Conley, M.D. (WVU), *Clinical Instructor in Family Practice*.

Karen A. Connors, Ph.D. (Temple U.), *Adjunct Assistant Professor of Pediatrics*.

Frederick M. Cooley, M.D. (WVU), *Clinical Associate Professor of Community Medicine*.

Norvin Cooley, Ph.D. (Nova U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Joel I. Cossrow, M.D. (T. Jeff. Med. U.), *Clinical Assistant Professor of Radiology (Diagnostic)*.

Bobby L. Caldwell, M.D. (Bowman Gray Sch. Med.), *Clinical Professor of Pathology*.

Edward J. Callahan, Ph.D. (U. Vt.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

George R. Callender, M.D. (U. Md.), *Clinical Assistant Professor of Orthopedic Surgery*.

Margaret Calvert, B.S., Cert.PT (U. Del.), *Clinical Instructor in Physical Therapy*.

William J. Canady, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry*.

James Capage, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

Amelia Jean Cardo, M.D. (N.J. Sch. Med.), *Clinical Assistant Professor of Radiology (Diagnostic)*.

Mark L. Carlson, M.D. (U. Nebr.), *Adjunct Assistant Professor of Community Medicine*.

Billy Ray Carlton, Ed.D. (U. Tenn.), *Adjunct Associate Professor of Community Medicine*.

Stephen W. Carmichael, Ph.D. (Tulane U.), *Associate Professor of Anatomy*.

Marshall J. Carper, M.D. (Med. C. Va.) *Professor and Chief of Family Practice, Charleston Division*.

James F. Carruth, Ph.D. (U. Ill.), *Clinical Professor of Behavioral Medicine and Psychiatry*.

Donald C. Carter, M.D. (U. Nebr.), *Professor of Behavioral Medicine and Psychiatry*.

William H. Carter, M.D. (U. Va.), *Clinical Professor of Medicine (Comprehensive Medicine)*.

Robert M. Castellan, M.D. (Brown U.), *Adjunct Instructor in Community Medicine and Pulmonary Medicine*.

John N. Casto, M.D. (WVU), *Clinical Instructor in Family Practice*.

Vincent Castranova, Ph.D. (WVU), *Adjunct Assistant Professor of Physiology*.

Leonidas Castro, M.D. (Nat'l. U. Colombia), *Clinical Professor of Radiology (Radiation Therapy)*.

Carl H. Cather, Jr., M.D. (Harvard U.), *Clinical Associate Professor of Otolaryngology*.

Carrel M. Caudill, M.D. (Duke U.), *Clinical Professor of Neurological Surgery*.

Jose A. Celis, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Urology*.

Graciano E. Cendana, M.D. (U. St. Thomas), *Clinical Associate Professor of Pathology*.

Louis S. Chaldares, M.D. (WVU), *Adjunct Instructor in Anesthesiology*.

John T. Chambers, M.D. (Case West. Res. U.), *Clinical Professor of Obstetrics and Gynecology*.

Cheng-Tien Chang, Ph.D. (SUNY), *Assistant Professor of Radiology (Radiation Safety)*.

William W. L. Chang, M.D. (Nat'l. Taiwan U.), *Associate Professor of Pathology*.

Jacques Charbonniez, M.D. (French U.), *Clinical Associate Professor of Surgery*.

Nyles Charon, Ph.D. (U. Minn.), *Associate Professor of Microbiology*.

Toa Seng Chen, Ph.D. (U. Tex.), *Assistant Professor of Radiology (Radiation Safety)*.

Shi-Ming (Samuel) Chou, M.D. (Nat'l. Taiwan U.), Ph.D. (U. Wisc.), *Professor of Pathology, Neurology, and Neurological Surgery*.

Louise Christensen, B.S. (WVU), *Clinical Instructor in Physical Therapy*.

Thomas E. Chvasta, M.D. (U. Pitt), *Clinical Associate Professor of Medicine (Gastroenterology)*.

Joseph A. Cipic, M.D. (U. Pitt), *Clinical Assistant Professor of Otolaryngology*.

Thomas S. Clark, M.D. (WVU), *Clinical Instructor in Family Practice*.

John P. Claude, M.S.W. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.

Paul L. Clausell, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry*.

David A. Clayman, Ph.D. (U. Vt.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division*.

Robert C. Cody, M.A. (U. Iowa), *Associate Professor of Otolaryngology*.

Brenda K. Colasanti, Ph.D. (WVU), *Professor of Ophthalmology and Pharmacology and Toxicology*.

Howard D. Colby, Ph.D. (SUNY), *Professor of Physiology*.

David F. Colvin, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine)*.

Philip E. Comer, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Janice W. Cone, M.S. (U. Denver), *Associate Professor of Behavioral Medicine and Psychiatry*.

Francis W. Conley, M.D. (U. Iowa), *Clinical Associate Professor of Medicine (Comprehensive Medicine)*.

Fredrick A. Conley, M.D. (WVU), *Clinical Instructor in Family Practice*.

Karen A. Connors, Ph.D. (Temple U.), *Adjunct Assistant Professor of Pediatrics*.



Frederick M. Cooley, M.D. (WVU), *Clinical Associate Professor of Community Medicine.*  
 Norvin Cooley, Ph.D. (Nova U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Joel I. Cossrow, M.D. (T. Jeff. Med. U.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Donald W. Cox, M.D. (Geo. Wash. U.), *Associate Professor and Acting Chairperson of Obstetrics and Gynecology.*  
 Charles R. Craig, Ph.D. (U. Wisc.), *Professor of Pharmacology and Toxicology.*  
 Paul L. Crawford, Ph.D. (Ohio U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
 William D. Crigger, M.D. (Temple U.), *Clinical Assistant Professor of Family Practice.*  
 Thomas W. Crosby, M.D. (WVU), *Associate Professor of Neurology and Pathology.*  
 Michael E. Crouch, M.D. (U. Ark.), *Associate Professor of Medicine (Rheumatology) and Physician, University Health Service.*  
 Michael R. Cuadra, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Pathology.*  
 James L. Culbertson, Ph.D. (Tulane U.), *Associate Professor of Anatomy.*  
 Roberta Curiel, M.S. (WVU), *Clinical Instructor in Otolaryngology.*  
 Larry Curnutte, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Amos Curry, M.S.W. (WVU), *Instructor in Behavioral Medicine and Psychiatry, Charleston Division.*  
 John C. Cwik, M.D. (Jeff. Med. C.), *Clinical Professor of Anesthesiology.*  
 Robert D'Alessandri, M.D. (N.Y. Med. C.), *Assistant Professor of Medicine; Section Chief of Comprehensive Medicine.*  
 Jean Danner, Ph.D. (Brandeis U.), *Adjunct Assistant Professor of Biochemistry.*  
 Aloysius Davis, M.D. (Harvard U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Charles M. Davis, Jr., M.D. (U. Penn), *Clinical Associate Professor of Orthopedic Surgery.*  
 Del Roy R. Davis, M.D. (U. Wash.), *Clinical Professor of Family Practice.*  
 Wirt L. Davis, M.D. (Med. C. Va.), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Samuel J. Deal, Ph.D. (U. Minn.), *Professor of Microbiology.*  
 Harakh V. Dedhia, M.B.B.S. (Grant Med. C.), *Assistant Professor of Anesthesiology and Comprehensive Medicine.*  
 Carlos A. deSanctis, M.D. (Nat'l. U. Rosario), *Assistant Professor of Anesthesiology.*  
 Anthony DiBartolomeo, M.D. (WVU), *Associate Professor of Medicine; Section Chief of Rheumatology; Assistant Dean for Graduate Medical Education; Medical Director, Ambulatory Care.*  
 Thomas O. Dickey, M.D. (Ohio St. U.), *Clinical Assistant Professor of Family Practice.*  
 Herbert G. Dickie, Jr., M.D. (U. Va.), *Clinical Assistant Professor of Surgery.*  
 Daniel Dickinson, M.D. (U. Pitt), *Clinical Assistant Professor of Surgery.*  
 Ronald W. Dillow, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Beverly Diurba, B.S. (U. Pitt), *Clinical Instructor in Physical Therapy.*  
 Patricia Mary Dix, M.D. (U. Ill.), *Instructor in Obstetrics and Gynecology.*  
 Larry A. Dodd, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Amy K. Dorn, M.D. (U. Miami), *Adjunct Assistant Professor of Medicine (Comprehensive Medicine).*  
 Eugene Dorsey, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Dinesh M. Doshi, M.B.B.S. (U. Bombay), *Assistant Professor of Anesthesiology.*  
 Steven Dreyer, Ph.D. (U. N.D.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 John J. Duda, Ph.D. (WVU), *Adjunct Assistant Professor of Microbiology.*  
 Ralph O. Dunker, Jr., M.D. (Ohio St. U.), *Associate Professor of Neurological Surgery.*  
 Dorothy C. Dunning, Ph.D. (Tufts U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 James Durig, M.D. (WVU), *Clinical Assistant Professor of Urology.*  
 John W. Durkin, Jr., M.D. (U. Vt.), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics and Gynecology, Wheeling Division.*  
 Paul H. Dworkin, M.D. (J. Hopkins U.), *Assistant Professor of Pediatrics.*  
 George W. Easley, M.D. (Med. C. Va.), *Clinical Associate Professor Emeritus of Surgery.*  
 Leonard M. Eckmann, M.D. (NYU), *Clinical Assistant Professor of Family Practice.*  
 Barry A. Edelstein, Ph.D. (Memphis St. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Roy A. Edwards, Jr., M.D. (Med. C. Va.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Sam B. Edwards, Jr., M.D. (Duke U.), *Associate Professor of Pediatrics (Pediatric Cardiology).*  
 Richard W. Eller, M.D. (Temple U.), *Professor of Anesthesiology.*  
 John S. Ellingson, Ph.D. (U. Mich.), *Associate Professor of Biochemistry.*  
 Thomas E. Ellis, Psy.D. (Baylor U.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

William H. Ellswood, M.D. (Tufts U.), *Clinical Professor of Radiology (Diagnostic)*.  
M. K. Elyaderani, M.D. (Tehran U.), *Associate Professor of Radiology (Diagnostic)*.  
Allan L. Engelberg, M.D. (Mt. Sinai Sch. Med.), *Adjunct Assistant Professor of Community Medicine*.  
Irwin S. Eskwith, M.D. (Syracuse U.), *Clinical Assistant Professor of Medicine (Cardiology)*.  
Patricia R. Evans, M.D. (WVU), *Instructor in Surgery (Emergency Room)*.  
William Evans, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
Alexander V. Fakadej, M.D. (U. Va.), *Associate Professor of Neurology and Pediatrics*.  
Donald E. Farmer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology)*.  
Kevin J. Farrell, M.D. (Med. C. Wisc.), *Assistant Professor of Surgery and Anesthesiology*.  
Okey B. Fawley, M.S.W. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
Jeffrey Fedan, Ph.D. (U. Ala.), *Adjunct Assistant Professor of Pharmacology and Toxicology*.  
Charles W. Fedde, M.D. (U. Colo.), *Clinical Assistant Professor of Surgery*.  
Peter E. Ferguson, M.D. (U. Iowa), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
Edmundo E. Figueroa, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Surgery*.  
Kenneth M. Fink, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
Melanie A. Fisher, M.D. (Penn St. U.), *Assistant Professor of Medicine (Comprehensive Medicine)*.  
Barbara Fitzpatrick, M.S. (WVU), *Clinical Instructor in Otolaryngology*.  
William W. Fleming, Ph.D. (Princeton U.), *Professor and Chairperson of Pharmacology and Toxicology*.  
Edmund B. Flink, M.D., Ph.D. (U. Minn.), *Claude Worthington Benedum Professor of Medicine (Metabolism-Endocrinology) and Behavioral Medicine and Psychiatry*.  
Richard E. Flood, M.D. (Jeff. Med. C.), *Clinical Professor of Family Practice*.  
David C. Fogarty, M.D. (WVU), *Clinical Assistant Professor of Surgery*.  
Joseph A. Fontana, M.D. (U. Penn.), *Assistant Professor of Medicine (Hematology/Oncology) and Biochemistry*.  
Richard J. Fonte, M.D. (N.J. Med. Sch.), *Assistant Professor of Behavioral Medicine and Psychiatry*.  
John F. Foss, M.D. (U. Iowa), *Assistant Professor of Obstetrics and Gynecology*.  
Daniel S. Foster, M.D. (Stanford U.), *Clinical Instructor in Surgery*.  
John L. Fox, M.D. (Geo. Wash. U.), *Professor of Neurological Surgery*.  
Raymond G. Franchini, M.D. (U. N.M.), *Associate Professor of Behavioral Medicine and Psychiatry; Physician, University Health Service*.  
Gunter N. Franz, Ph.D. (U. Wash.), *Associate Professor of Physiology*.  
John P. Franz, M.D. (Georgetown U.), *Clinical Assistant Professor of Urology*.  
David G. Frazer, Ph.D. (WVU), *Adjunct Associate Professor of Physiology*.  
Richard G. Frederickson, Ph.D. (U. N.D.), *Associate Professor of Anatomy*.  
John C. Frich, Jr., M.D. (Geo. Wash. U.), *Professor of Radiology; Section Chief of Radiation Therapy*.  
Morton H. Friedman, Ph.D. (U. Tenn.), *Associate Professor of Anatomy*.  
James L. Frost, M.D. (J. Hopkins U.), *Associate Professor of Pathology*.  
Nicholas W. Fugo, M.D. (U. Chi.), Ph.D. (St. U. Iowa), *Professor Emeritus of Obstetrics and Gynecology*.  
John L. Fullmer, M.D. (WVU), *Clinical Associate Professor of Family Practice*.  
Peter Gabriel, M.D. (Creighton U.), *Clinical Assistant Professor of Radiology (Diagnostic)*.  
Orlando F. Gabriele, M.D. (Yale U.), *Professor and Chairperson of Radiology*.  
R. Brooks Gainer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine)*.  
Hugh Galford, B.S. (D&E C.), *Clinical Assistant Professor of Physical Therapy*.  
Rama Ganguly, Ph.D. (U. Calcutta), *Associate Professor of Medicine (Infectious Diseases) and Microbiology*.  
Barbara Garland, Ph.D. (U. N.C.), *Assistant Professor of Community Medicine*.  
Dominic J. Gaziano, M.D. (Med. C. Va.), *Clinical Professor of Medicine (Comprehensive Medicine)*.  
James A. Genin, M.D. (WVU), *Clinical Instructor in Ophthalmology*.  
Demitar Georgiev, M.D. (U. St. Klement), *Clinical Assistant Professor of Obstetrics and Gynecology*.  
Maria Georgiev, M.D. (Med. Sch. Charles U.), *Associate Professor of Medicine, Charleston Division*.  
Vincent F. Gerencser, Ph.D. (U. Ky.), *Associate Professor of Microbiology*.  
Alfred D. Ghaphery, M.D. (U. Pitt), *Clinical Associate Professor of Surgery*.  
Robert L. Ghiz, M.D. (Northwestern U.), *Clinical Associate Professor of Orthopedic Surgery*.  
William E. Gilmore, M.D. (U. Wisc.), *Clinical Professor of Surgery*.  
Fernando G. Giustini, M.D. (U. Rome), *Clinical Associate Professor of Obstetrics and Gynecology*.

Wilbert E. Gladfelter, Ph.D. (U. Penn), *Associate Professor of Physiology*.  
 Henry R. Glass, Jr., M.D. (U. Louisville), *Clinical Associate Professor of Surgery*.  
 Louis M. Glick, M.D. (U. Md.), *Clinical Assistant Professor of Medicine (Gastroenterology)*.  
 Douglas R. Gnepp, M.D. (Duke U.), *Assistant Professor of Pathology*.  
 Lewis S. Goldberg, Ph.D. (Am. U.), *Clinical Instructor in Behavioral Medicine and Psychiatry*.  
 A. Rafael Gomez, M.D. (Bowman Gray Sch. Med.), *Clinical Instructor in Medicine (Comprehensive Medicine)*.  
 Irving J. Goodman, Ph.D. (U. Rochester), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 Robert L. Goodman, M.D. (U. Mich.), *Assistant Professor of Physiology*.  
 Andrew Goodwin, M.D. (U. Mich.), *Clinical Professor of Radiology (Diagnostic)*.  
 Claudia (Morgan) Goodwin, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic)*.  
 Thomas W. Graber, M.D. (Case West. Res. U.), *Clinical Assistant Professor of Surgery*.  
 David F. Graf, M.D. (Albany Med. C.), *Assistant Professor of Anesthesiology*.  
 Anthony W. Graham, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
 Juan L. Granados, M.D. (U. Madrid), *Associate Professor of Obstetrics and Gynecology*.  
 Robert W. Graves, D.D.S. (WVU), *Professor of Pharmacology and Toxicology*.  
 David B. Gray, M.D. (U. Md.), *Clinical Professor of Surgery*.  
 Francis H. Green, M.D. (Manchester U.), *Adjunct Assistant Professor of Pathology*.  
 Frank C. Griswold, M.D. (WVU), *Clinical Assistant Professor of Surgery*.  
 George L. Grubb, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology*.  
 Stephen R. Grubb, M.D. (Med. C. Va.), *Assistant Professor of Medicine, Charleston Division*.  
 Beverly Ann Gryth, B.A. (Augsburg C.), *Clinical Assistant Professor of Physical Therapy*.  
 Robert F. Gustke, M.D. (WVU), *Clinical Assistant Professor of Medicine (Gastroenterology)*.  
 Barbara J. Gutman, M.Ed. (U. Pitt), *Assistant Professor of Medical Technology*.  
 Ludwig Gutmann, M.D. (Columbia U.), *Professor and Chairperson of Neurology; Professor of Physiology*.  
 Jose A. Gutrecht, M.D. (U. B. Aires), *Professor of Neurology*.  
 Nicholas Hahon, B.S. (D&E C.), *Adjunct Assistant Professor of Pediatrics*.  
 Duane E. Haines, Ph.D. (Mich. St. U.), *Professor of Anatomy*.  
 Charles E. Haislip, M.D. (WVU), *Clinical Associate Professor of Otolaryngology*.  
 Milton R. Hales, M.D. (U. S.C.), *Professor of Pathology*.  
 David S. Hall, Ph.D. (U. Ky.), *Associate Professor of Community Medicine*.  
 John E. Hall, Ph.D. (Purdue U.), *Professor of Microbiology*.  
 Rodney L. Hall, M.D. (WVU), *Clinical Assistant Professor of Anesthesiology*.  
 Sobisca S. Hall, M.D. (U. Chicago), *Clinical Professor Emeritus of Otolaryngology*.  
 Trevelyn F. Hall, II, M.D. (WVU), *Clinical Associate Professor of Otolaryngology*.  
 William L. Hall, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology)*.  
 George V. Hamrick, M.D. (U. Md.), *Clinical Associate Professor of Ophthalmology*.  
 John L. Hankinson, M.S. (Ga. Tech.), *Adjunct Assistant Professor of Physiology*.  
 Harold H. Harper, M.S. Pharm. (WVU), *Adjunct Assistant Professor of Community Medicine*.  
 Charles L. Harris, Ph.D. (U. Ill.), *Associate Professor of Biochemistry*.  
 Howard H. Harris, M.D. (U. Mo.), *Assistant Professor of Surgery*.  
 Marybeth Harris, M.S. (Med. C. Va.), *Instructor in Physical Therapy*.  
 William L. Harris, M.D. (WVU), *Clinical Instructor in Family Practice*.  
 Hollister S. Harrison, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics*.  
 Dennis L. Hart, M.S. (U. New Haven), *Assistant Professor of Physical Therapy*.  
 John M. Hartman, M.D. (U. Md.), *Clinical Associate Professor of Medicine (Comprehensive Medicine)*.  
 John B. Haslem, M.D. (Duke U.), *Clinical Associate Professor of Radiology (Radiation Therapy)*.  
 Sherman E. Hatfield, M.D. (Med. C. Va.), *Clinical Assistant Professor of Otolaryngology*.  
 Richard D. Hayes, M.D. (WVU), *Clinical Instructor in Family Practice*.  
 William G. Hayes, M.D. (Tulane U.), *Clinical Associate Professor of Radiology (Diagnostic)*.  
 Richard J. Head, Ph.D. (Adelaide U.), *Assistant Professor of Pharmacology and Toxicology*.  
 George A. Hedge, Ph.D. (Stanford U.), *Professor and Chairperson of Physiology*.  
 Elwood H. Heilman, M.D. (U. Okla.), *Clinical Assistant Professor of Orthopedic Surgery*.  
 Peter L. Hein, M.D. (Georgetown U.), *Professor of Behavioral Medicine and Psychiatry*.  
 Terring W. Heironimus, III, M.D. (U. Va.), *Professor of Anesthesiology*.  
 Charles A. Heiskell, M.D. (Northwestern U.), *Clinical Assistant Professor of Surgery*.  
 Marta J. Henderson, M.S. (WVU), *Associate Professor of Medical Technology*.  
 Charles D. Hershey, M.D. (U. Mich.), *Clinical Professor Emeritus of Surgery*.  
 Robert D. Hess, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice*.  
 Robert W. Hibbard, M.D. (U. Tenn.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 David P. Hill, M.D. (Duke U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Rusi A. Hilloomala, Ph.D. (U. Ala.), *Associate Professor of Anatomy*.



Henry M. Hills, M.D. (U. Iowa), *Clinical Assistant Professor of Orthopedic Surgery.*

Bette G. Hinton, M.D. (U. Louisville), *Clinical Assistant Professor of Community Medicine and Family Practice.*

David E. Hinton, Ph.D. (U. Miss.), *Associate Professor of Anatomy.*

George P. Hlusko, M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry and Pediatrics, Charleston Division.*

Florence K. Hoback, M.D. (U. Md.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Thomas K. Hodous, M.D. (J. Hopkins U.), *Adjunct Assistant Professor of Medicine (Pulmonary Medicine).*

Donald H. Hofreuter, M.D. (Columbia U.), *Clinical Assistant Professor of Family Practice.*

Michael T. Hogan, M.D. (Albany Med. C.), *Clinical Associate Professor of Radiology (Diagnostic).*

Charles D. Holland, M.S.H.A. (Northwestern U.), *Adjunct Associate Professor of Community Medicine.*

Fred Holt, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*

Jean D. Holter, B.S. (WVU), *Assistant Professor of Medical Technology.*

Sung Hak Hong, M.D. (Cath. Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic).*

David L. Hoover, M.D. (U. Md.), *Assistant Professor of Medicine (Infectious Diseases), and Physician, University Health Service.*

Thomas A. Horsman, M.D. (WVU), *Clinical Assistant Professor of Medicine (Infectious Diseases).*

Joseph A. Horton, M.D. (Tulane U.), *Associate Professor of Radiology (Diagnostic).*

Brian D. Houston, M.D. (WVU), *Clinical Assistant Professor of Medicine (Rheumatology).*

Logan W. Hovis, M.D. (U. Mich.), *Clinical Assistant Professor of Anesthesiology.*

Julie A. Howell, M.P.T. (Baylor U.) *Clinical Instructor in Physical Therapy.*

Vera Hoylman-Ayoubi, M.D. (WVU), *Clinical Associate Professor of Pediatrics.*

Ellen E. Hrabovsky, M.D. (Vanderbilt U.), *Associate Professor of Surgery and Pediatrics.*

Francis Huber, M.D. (U. Tenn.), *Clinical Assistant Professor of Anesthesiology.*

Robert T. Humphries, M.D. (U. Va.), *Clinical Assistant Professor Emeritus of Orthopedic Surgery.*

Beatrice R. Hunter, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

John P. Hutton, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Richard M. Iammarino, M.D. (Stritch Sch. Med.), *Professor of Pathology; Section Chief of Clinical Pathology.*

Steven L. Inger, Ph.D. (Bowl. Grn. St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Barbara D. Ingersoll, Ph.D. (Penn St. U.), *Associate Professor of Behavioral Medicine and Psychiatry.*

James M. Irish, Ph.D. (U. Ariz.), *Assistant Professor of Physiology.*

Rabindran Israel, M.B.B.S. (Stanley Med. C.), *Clinical Assistant Professor of Pediatrics.*

Harry A. Jackson, M.D. (Med. C. Va.), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*

John E. Jackson, M.D. (Temple U.), *Clinical Professor of Family Practice.*

Arthur R. Jacobson, M.D. (U. Tex.), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Singanallur N. Jaggannathan, Ph.D. (U. Bombay), *Associate Professor of Pathology and Biochemistry.*

Abnash C. Jain, M.D. (Govt. Med. C., Patiala), *Professor of Medicine; Section Chief of Cardiology.*

Pushpa R. Jain, M.D. (Grant Med. C.), *Assistant Professor of Radiology (Radiation Therapy).*

Paul J. Jakubec, M.D. (U. Pitt), *Clinical Professor of Pediatrics.*

George W. Jaquiss, M.D. (U. Kans.), *Clinical Associate Professor of Otolaryngology.*

Joe N. Jarrett, M.D. (U. Penn), *Clinical Professor of Family Practice.*

Jesse J. Jenkins, III, M.D. (J. Hopkins U.), *Associate Professor of Pathology and Pediatrics.*

Carl E. Johnson, M.D. (Northwestern U.), *Clinical Associate Professor Emeritus of Medicine.*

Jerome G. Johnson, M.D. (U. Minn.), *Clinical Assistant Professor of Surgery.*

Michael D. Johnson, Ph.D. (U. Mich.), *Assistant Professor of Physiology.*

Barbara Jones, M.D. (U. Utah), *Professor and Assistant Chairperson of Pediatrics.*

David S. Jones, M.D. (Loyola U.), Ph.D. (U. Minn.), *Professor Emeritus of Anatomy.*

Douglas Jones, M.D. (Vanderbilt U.), *Assistant Professor of Medicine, Charleston Division.*

Eric T. Jones, M.D. (U. Mich.), *Assistant Professor of Orthopedic Surgery.*

John E. Jones, M.D. (U. Utah), *Professor of Medicine (Metabolism-Endocrinology); Dean, School of Medicine.*

R. Mark Jones, M.D. (WVU), *Clinical Instructor in Family Practice.*

Steven J. Jubelirer, M.D. (U. Cinn.), *Assistant Professor of Medicine, Charleston Division.*

Donald B. Kamerer, M.D. (Temple U.), *Clinical Associate Professor of Otolaryngology.*

Stanley J. Kandzari, M.D. (WVU), *Professor of Urology.*

Deborah A. Kania, M.S. (WVU), *Instructor in Otolaryngology.*

David A. Kappel, M.D. (WVU), *Clinical Associate Professor of Surgery.*  
 Joseph Kassis, M.D. (Damascus U.), *Clinical Instructor in Urology.*  
 Sam Katz, Ph.D. (Northwestern U.), *Professor of Biochemistry.*  
 Frank J. Keefer, M.D. (Geo. Wash. U.), *Clinical Assistant Professor of Family Practice.*  
 George M. Kellas, M.D. (U. Penn), *Clinical Associate Professor of Family Practice.*  
 Arthur E. Kelley, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 John F. Kelley, M.D. (McGill U.), *Professor of Behavioral Medicine and Psychiatry and Pediatrics.*  
 John W. Kennard, M.D. (Bowman Gray Sch. Med.), *Clinical Professor of Radiology (Diagnostic).*  
 Roland L. Kennedy, M.D. (Ohio St. U.), *Professor of Anesthesiology.*  
 Robert D. Kerns, Ph.D. (U. Pitt), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 James W. Kessel, M.D. (WVU), *Clinical Assistant Professor of Anesthesiology.*  
 Henry L. Kettler, M.D. (WVU), *Clinical Assistant Professor of Neurology.*  
 Gordon S. Keyes, D.D.S. (U. Md.), *Associate Professor of Pathology.*  
 Rashida A. Khakoo, M.D. (Makerere U.), *Associate Professor of Medicine (Infectious Diseases).*  
 Jamal H. Khan, M.B.B.S. (King Edward Med. C.), *Clinical Associate Professor of Surgery.*  
 Mohammad Z. Khan, M.B.B.S. (King Edward Med. C.), *Clinical Associate Professor of Surgery.*  
 Chung William Kim, M.D. (Kyung-pook Nat'l. U.), *Clinical Assistant Professor of Surgery.*  
 Jin-Chul Kim, M.D. (Med. C. Korea), *Assistant Professor of Radiology (Radiation Therapy).*  
 Donald L. Kimmel, Ph.D. (U. Mich.), *Professor Emeritus of Anatomy.*  
 Phillip King, M.D. (Washington U., St. Lou.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Roger E. King, M.D. (WVU), *Clinical Associate Professor of Surgery.*  
 Billy E. Kirk, Ph.D. (Ohio St. U.), *Associate Professor of Microbiology.*  
 George F. Kish, M.D. (Ohio St. U.), *Assistant Professor of Surgery.*  
 Richard E. Klabunde, Ph.D. (U. Ariz.), *Assistant Professor of Physiology.*  
 Rolf F. Kletzien, Ph.D. (U. Wisc.), *Associate Professor of Biochemistry.*  
 William G. Klingberg, M.D. (Wash. U., St. Lou.), *Professor and Chairperson of Pediatrics.*  
 Ronica M. Kluge, M.D. (U. Fla.), *Professor of Medicine; Section Chief of Infectious Diseases.*  
 Richard B. Knapp, M.D. (N.Y. Med. C.), *Professor and Chairperson of Anesthesiology.*  
 Thomas S. Knapp, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 James A. Knost, M.D. (LSU), *Assistant Professor of Medicine (Hematology/Oncology).*  
 Jehoon Peter Ko, M.D. (Korea U. Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Jae Myung Koh, M.D. (Kyung-pook Nat'l. U.), *Clinical Assistant Professor of Radiology.*  
 Charles M. Koliner, M.D. (Columbia U.), *Associate Professor of Anesthesiology and Medicine (Critical Care).*  
 Martin J. Kompor, M.D. (U. S.C.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Paul T. Kopczynski, M.S. (Case West. Res. U.), *Adjunct Instructor in Community Medicine.*  
 Donald M. Koppel, M.D. (U. Ill.), *Clinical Associate Professor of Medicine (Hematology/Oncology).*  
 Ray Koppelman, Ph.D. (U. Chicago), *Professor of Biochemistry.*  
 Miroslav Kovacevich, M.D. (Med. Fac., U. Belgrade), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 John M. Krall, Ph.D. (U. Iowa), *Professor of Community Medicine (Biostatistics).*  
 Reginald F. Krause, Ph.D. (U. Rochester), M.D. (U. Vt.), *Professor Emeritus of Biochemistry.*  
 Chandra Mohan Kumar, M.B.B.S. (All India Inst. Med. Sci.), *Clinical Assistant Professor of Pediatrics.*  
 Otto J. Kunst, M.D. (U. Miami), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Roberto E. Kusminsky, M.D. (U. B. Aires), *Assistant Professor of Surgery, Charleston Division.*  
 David A. Labosky, M.D. (U. Penn.), *Assistant Professor of Orthopedic Surgery.*  
 Peter P. Ladewig, M.D. (U. Berlin), *Clinical Professor Emeritus of Pathology.*  
 Chi Whang Lai, Ph.D. (Purdue U.), *Associate Professor of Radiology (Nuclear Medicine).*  
 Marcel G. Lambrechts, M.D. (Louvaine), *Clinical Assistant Professor of Pediatrics.*  
 James L. Lane, M.D. (U. Pitt), *Clinical Associate Professor of Urology.*  
 Joyce Lanham, M.S. (U. N.C.), *Clinical Instructor in Otolaryngology.*  
 N. LeRoy Lapp, M.D. (Temple U.), *Professor of Medicine; Section Chief of Pulmonary Medicine.*  
 Norman J. Lass, Ph.D. (Purdue U.), *Associate Professor of Otolaryngology.*  
 Derrick L. Latos, M.D. (WVU), *Clinical Associate Professor of Medicine (Nephrology).*  
 Lawrence M. Lavine, M.D. (Geo. Wash. U.) *Instructor in Anesthesiology.*  
 Robert L. Leadbetter, M.D. (WVU), *Clinical Associate Professor of Surgery.*  
 Jo S. Ledwell, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Alberto C. Lee, M.D. (U. S. Tomas, Manila), *Clinical Instructor in Medicine (Comprehensive Medicine).*

Chi Meen Lee, M.D. (Kyung-pook U.), *Clinical Assistant Professor of Urology.*

David P. Lee, M.D. (WVU), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*

Hans Lee, M.D. (Seoul Nat'l. U.), *Clinical Assistant Professor of Surgery.*

Ping Lee, Ph.D. (Duke U.), *Professor of Physiology.*

Johnsey L. Leef, M.D. (WVU), *Clinical Assistant Professor of Radiology.*

Sidney C. Lerfald, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Warren D. Leslie, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Pediatrics.*

Arnold J. Levine, Ph.D. (Columbia U.), *Adjunct Professor of Behavioral Medicine and Psychiatry.*

Robert A. Lewine, M.D. (U. Pitt), *Clinical Associate Professor of Pediatrics.*

Mary L. Lewis, M.D. (Emory U.), *Clinical Professor of Medicine (Comprehensive Medicine).*

Michael J. Lewis, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Josiah K. Lilly, M.D. (WVU), *Clinical Assistant Professor of Anesthesiology.*

Rogelio T. Lim, M.D. (U. S. Tomas, Manila), *Clinical Instructor in Medicine (Comprehensive Medicine).*

Romeo Y. Lim, M.D. (U. Philippines), *Clinical Associate Professor of Otolaryngology.*

David J. Lindert, M.D. (U. Ill.), *Clinical Assistant Professor of Urology.*

Harry T. Linger, M.D. (Med. C. Va.), *Clinical Instructor in Ophthalmology.*

Robert T. Linger, M.D. (Harvard U.), *Clinical Associate Professor of Surgery.*

John C. Linton, Ph.D. (Kent St. U.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Luis A. Loimil, M.D. (U. B. Aires), *Clinical Assistant Professor of Orthopedic Surgery.*

Malcolm B. Loudon, M.D. (WVU), *Clinical Assistant Professor of Neurology.*

Betholene F. Love, Ed.D. (WVU), *Professor and Program Director/Education Coordinator of Medical Technology.*

Diana Loveless, B.S. (Med. C. Va.), *Clinical Instructor in Physical Therapy.*

Carlos E. Lucero, M.D. (Cordoba Med. Sch.), *Clinical Instructor in Pediatrics.*

Richard V. Lynch, M.D. (U. Penn), *Clinical Associate Professor of Medicine (Allergy and Clinical Immunology).*

Lloyd B. McCabe, M.D. (St. Lou. U.), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*

Robert E. McCafferty, Ph.D. (U. Pitt), *Professor of Anatomy.*

Michael F. McCagh, M.D. (WVU), *Clinical Instructor in Medicine (Dermatology).*

Roger L. McCauley, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

William T. McClellan, M.D. (WVU), *Clinical Instructor in Urology.*

Kathleen A. McCluskey, Ph.D. (U. Kans.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

D. Verne McConnell, M.D. (Columbia U.), *Clinical Professor of Surgery.*

Lewis H. McConnell, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*

Arch T. McCoy, M.D. (Med. C. Va.), *Clinical Associate Professor of Urology.*

Leslie McCoy, M.D. (U. Mich.), *Clinical Associate Professor of Community Medicine.*

Bradford McCuskey, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Urology.*

Robert S. McCuskey, Ph.D. (Case West. Res. U.), *Professor and Chairperson of Anatomy.*

Donald E. McDowell, M.D. (Temple U.), *Clinical Professor of Surgery.*

Edward N. McIntosh, M.D. (Harvard U.), *Professor of Obstetrics and Gynecology and Medicine (Metabolism-Endocrinology).*

Brittain McJunkin, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*

Richard McKinley, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology.*

William O. McMillan, Jr., M.D. (Duke U.), *Clinical Professor of Medicine (Comprehensive Medicine).*

Michael D. McNeer, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Samuel P. McNeill, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Joseph J. McPhillips, Ph.D. (Jeff. Med. C.), *Adjunct Professor of Pharmacology and Toxicology.*

Austin J. McSweeney, Ph.D. (No. Ill. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Daniel B. MacCallum, M.D. (U. Ky.), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*

John P. MacCallum, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Kenneth G. MacDonald, M.D. (Cornell U.), *Clinical Associate Professor of Surgery.*

Alfred J. Magee, M.D. (L.I. C. Med.), *Clinical Associate Professor of Ophthalmology.*



Jamal E. Mahin, M.D. (Tehran Med. Sch.), *Assistant Professor of Pathology (Clinical Pathology)*.  
 Daniel A. Mairs, M.D. (Duke U.), *Clinical Associate Professor of Obstetrics and Gynecology*.  
 Tony C. Majestro, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery*.  
 Indira Majumder, M.D. (S.C.B. Med. C.), *Clinical Instructor in Pediatrics*.  
 Paul F. Malone, M.D. (WVU), *Clinical Associate Professor of Otolaryngology*.  
 James W. Manier, M.D. (Vanderbilt U.), *Professor of Medicine and Section Chief of Gastroenterology*.  
 Eric P. Mantz, M.D. (WVU), *Clinical Assistant Professor of Surgery*.  
 James P. Markham, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 Robert Marshall, M.D. (Queen's U.), *Clinical Professor of Medicine (Cardiology)*.  
 James D. Martin, M.D. (Vanderbilt U.), *Professor of Neurology*.  
 Robert B. Martin, Ph.D. (WVU), *Associate Professor of Orthopedic Surgery*.  
 Robert W. Martin, M.D. (Hahnemann Med. C.), *Assistant Professor of Medicine (Behavioral and Ambulatory Medicine); Physician, University Health Service*.  
 Orestes A. Martinez, M.D. (Fac. of Med., San Fernando), *Associate Professor of Anesthesiology*.  
 Stanley S. Masilamani, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine (Gastroenterology)*.  
 John E. Mateer, M.D. (M. S. Hershey Med. Cen.), *Assistant Professor of Neurology*.  
 Phillip B. Mathias, M.D. (WVU), *Clinical Associate Professor of Otolaryngology*.  
 Michael G. Mawhinney, Ph.D. (WVU), *Professor of Urology and Pharmacology and Toxicology*.  
 Ward W. Maxson, M.D. (U. Mich.), *Clinical Associate Professor of Obstetrics and Gynecology*.  
 Victor E. Mazzocco, M.D. (WVU), *Clinical Assistant Professor of Medicine (Metabolism-Endocrinology)*.  
 Charles E. Meacci, M.S. (Boston U.), *Assistant Professor of Physical Therapy*.  
 Catalino B. Mendoza, Jr., M.D. (Manila Centr. U.), *Clinical Associate Professor of Surgery*.  
 Henry F. Mengoli, Ph.D. (Cath. U. Am.), *Associate Professor of Microbiology*.  
 James A. Merchant, M.D. (U. Iowa), *Adjunct Associate Professor (part-time) of Medicine (Pulmonary Medicine) and Community Medicine*.  
 Kathleen M. Meyer, M.D. (U. Vt.), *Clinical Assistant Professor of Pediatrics*.  
 D. Franklin Milam, M.D. (U. Penn), *Professor and Chairperson, of Urology*.  
 Philip R. Miles, Ph.D. (WVU), *Adjunct Associate Professor of Physiology*.  
 Ronald J. Millecchia, Ph.D. (Rockefeller U.), *Associate Professor of Physiology*.  
 Lawrence S. Miller, M.D. (U. Va.), *Clinical Professor of Orthopedic Surgery*.  
 Michael Miller, Ph.D. (Penn St. U.), *Assistant Professor of Biochemistry*.  
 Phyllis M. Miller, M.S.W. (Purdue U.), *Instructor in Behavioral Medicine and Psychiatry, Charleston Division*.  
 Jovan Milutinovich, M.D. (Med. Fac. Zagreb), *Associate Professor of Medicine; Section Chief of Nephrology*.  
 Anthony P. Minard, Cert. PT (U. Penn), *Clinical Instructor in Physical Therapy*.  
 Dane W. Moore, Jr., M.S. (WVU), *Professor of Medical Technology*.  
 Robert N. Moore, D.D.S. (Northwestern U.), Ph.D. (U. Rochester), *Associate Professor of Anatomy*.  
 Richard A. Moran, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy*.  
 Walter H. Moran, M.D. (Harvard U.), *Professor of Surgery and Physiology; Director of Emergency Room*.  
 Michael A. Morehead, M.D. (WVU), *Clinical Assistant Professor of Neurology*.  
 Barbara U. Morgan, M.D. (WVU), *Clinical Assistant Professor of Neurology and Pediatrics*.  
 David M. Morgan, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry*.  
 David Z. Morgan, M.D. (Med. C. Va.), *Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Associate Dean, School of Medicine (Student Affairs)*.  
 Edwin J. Morgan, M.D. (U. Pitt), *Associate Professor of Medicine (Behavioral and Ambulatory Medicine) and Behavioral Medicine and Psychiatry; Medical Director, University Health Service*.  
 William C. Morgan, M.D. (U. Va.), *Clinical Associate Professor of Otolaryngology*.  
 Winfield S. Morgan, M.D. (Temple U.), *Professor of Pathology*.  
 Joseph B. Moriarty, Ph.D. (Fordham U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 Anthony P. Morise, Jr., M.D. (U. Vt.), *Assistant Professor of Medicine (Cardiology)*.  
 Joseph T. Morris, M.D. (Hahnemann Med. C.), *Clinical Associate Professor of Pediatrics*.  
 Abdolsamand Mossahebi, M.D. (U. Tehran), *Clinical Instructor in Pediatrics*.  
 Thomas W. Mou, M.D. (U. Rochester), *Professor of Community Medicine and Medicine (Comprehensive Medicine); Dean, Charleston Division*.  
 Martha K. Mullett, M.D. (WVU), *Associate Professor of Pediatrics*.  
 Phillip J. Murray, M.B.Ch.B. (U. Cape Town), *Assistant Professor of Community Medicine*.  
 David Z. Myerberg, M.D. (Columbia C.), *Assistant Professor of Pediatrics*.  
 Ganesan Nagarajan, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic)*.

Carlos A. Naranjo, M.D. (Med. C., Ecuador), *Clinical Assistant Professor of Urology.*  
 Phyllis Nash, M.S.W. (WVU), *Instructor in Behavioral Medicine and Psychiatry.*  
 LaRee D. Naviaux-D'Abreo, Ph.D. (Duquesne U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 William A. Neal, M.D. (WVU), *Associate Professor of Pediatrics; Section Chief of Pediatric Cardiology.*  
 William H. Nelson, Jr., M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry and Medicine (Behavioral and Ambulatory Medicine).*  
 William R. Nelson, Ph.D. (U. Chicago), *Associate Professor of Pathology (Clinical Pathology).*  
 David Nesselroade, M.D. (WVU), *Assistant Professor of Family Practice.*  
 Ralph H. Nestmann, M.D. (Ind. U.), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*  
 Benjamin Newman, M.D. (U. Beirut), *Clinical Associate Professor of Family Practice.*  
 Roger P. Nichols, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*  
 William E. Noble, M.D. (U. Pitt), *Clinical Assistant Professor of Medicine, Wheeling Division.*  
 William L. Noble, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 G. Robert Nugent, M.D. (U. Cincin.), *Professor and Chairperson, Division of Neurological Surgery.*  
 Francis R. Nullett, M.D. (Cornell U.), *Instructor in Surgery (Emergency Room).*  
 Robert E. O'Connor, M.D. (Harvard U.), *Clinical Associate Professor of Ophthalmology.*  
 Morris H. O'Dell, M.D. (Med. C. Va.), *Clinical Professor of Surgery.*  
 Michael V. O'Keefe, M.D. (WVU), *Assistant Professor of Medicine (Cardiology).*  
 Stephen A. Olenchok, Ph.D. (WVU), *Adjunct Assistant Professor of Microbiology.*  
 Anthony J. Oliverio, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*  
 William W. Orr, Jr., M.D. (Med. C. Ga.), *Assistant Professor of Behavioral Medicine and Psychiatry and Medicine (Behavioral and Ambulatory Medicine.)*  
 R. Wade Ortel, M.D. (U. Md.), *Professor of Medicine, Wheeling Division.*  
 Carl E. Ortmeyer, Ph.D. (Iowa St. U.), *Adjunct Assistant Professor of Community Medicine.*  
 Dennis O. Overman, Ph.D. (U. Mich.), *Associate Professor of Anatomy.*  
 Bernadette R. Page, M.D. (Loyola-Stritch Sch. Med.), *Clinical Instructor in Surgery.*  
 John R. Page, M.D. (Loyola-Stritch Sch. Med.), *Clinical Assistant Professor of Surgery.*  
 Albert Paine, M.D. (Med. C. Va.), *Clinical Associate Professor of Otolaryngology.*  
 Antonio Palladino, M.D. (U. Naples), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Jan E. Palmer, M.D. (SUNY), *Assistant Professor of Family Practice and Physician, University Health Service.*  
 Louis C. Palmer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*  
 Joseph V. Panepinto, Ph.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Ruth A. Panepinto, Ph.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Undong Park, M.D. (Kyung-pook U.), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 William F. Park, M.D. (U. Md.), *Clinical Assistant Professor of Ophthalmology.*  
 Nolan C. Parsons, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*  
 Richard S. Pataki, M.D. (N.Y. Med. C.), *Clinical Assistant Professor of Pathology.*  
 Robert D. Patchell, M.D. (U. Toronto), *Clinical Professor of Obstetrics and Gynecology.*  
 Amulakh M. Patel, M.D. (M. P. Shah Med. Sch.), *Clinical Instructor in Surgery.*  
 Mahendrakumar M. Patel, M.D. (Med. C. Baroda), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
 Joseph R. Patterson, M.D. (Tulane U.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Denzil Patton, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*  
 Ross M. Patton, M.D. (WVU), *Clinical Instructor in Community Medicine.*  
 Thompson E. Percy, M.D. (WVU), *Instructor in Obstetrics and Gynecology, Charleston Division.*  
 Richard J. Pearson, M.D. (Cambridge U.), *Professor and Chairperson of Community Medicine; Professor of Family Practice.*  
 Terry R. Perrine, M.D. (Med. C. Va.), *Assistant Professor of Family Practice, Charleston Division.*  
 John J. Petronis, M.S. (WVU), *Associate Professor of Physical Therapy.*  
 Edward L. Petsonk, M.D. (McGill U.), *Adjunct Instructor in Medicine (Pulmonary Medicine).*  
 Carl Pfirman, B.S. (Penn St. U.), *Clinical Instructor in Physical Therapy.*  
 Alfred H. Pfister, M.D. (Ind. U.), *Clinical Professor of Medicine (Comprehensive Medicine).*  
 Ruth M. (Trotter) Phillips, M.D. (J. Hopkins U.), *Associate Professor of Pediatrics.*  
 George E. Pickett, M.D. (McGill U.), *Clinical Professor of Community Medicine.*  
 Justus C. Pickett, M.D. (Case West. Res. U.), *Professor Emeritus of Orthopedic Surgery.*  
 Carlin A. Pinkstaff, Ph.D. (Emory U.), *Associate Professor of Anatomy.*  
 Betty S. Pittman, M.A. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Arthur L. Poffenbarger, M.D. (U. Md.), *Clinical Professor of Neurology.*

Robert B. Point, M.D. (U. Va.), *Clinical Associate Professor of Medicine (Dermatology)*.  
W. Warren Point, M.D. (Harvard U.), *Professor and Assistant Chairperson of Medicine; Chief of Medicine, Charleston Division; Associate Dean, School of Medicine, Charleston Division*.  
Edward P. Polack, M.D. (WVU), *Clinical Assistant Professor of Surgery*.  
Thomas W. Poland, M.D. (WVU), *Assistant Professor of Anesthesiology*.  
Herbert H. Pomerance, M.D. (Columbia U.), *Professor and Chief of Pediatrics, Charleston Division*.  
Charles D. Ponte, Pharm. D. (U. Utah), *Assistant Professor of Family Practice*.  
Thomas R. Poole, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology*.  
Robert S. Pope, Ph.D. (U. N.D.), *Associate Professor of Anatomy*.  
Robert S. Pore, Ph.D. (UCLA), *Associate Professor of Microbiology*.  
Alexius T. Portz, Ph.D. (U. Mich.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
Thomas G. Potterfield, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics*.  
Roxann L. Powers, M.D. (WVU), *Assistant Professor of Medicine (Comprehensive Medicine)*.  
Lee H. Pratt, M.D. (WVU), *Clinical Associate Professor of Neurology*.  
Jack Pushkin, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery*.  
Willard Pushkin, M.D. (Med. C. Va.), *Clinical Professor Emeritus of Medicine*.  
Gina M. Puzzuoli, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
Eugene A. Quarick, Ph.D. (Syracuse U.), *Professor of Behavioral Medicine and Psychiatry*.  
Eric L. Radin, M.D. (Harvard U.), *Professor and Chairperson of Orthopedic Surgery*.  
Gale W. Rafter, Ph.D. (U. Wash.), *Professor of Biochemistry*.  
Peter C. Raich, M.D. (U. Wisc.), *Professor of Medicine; Section Chief of Hematology/Oncology*.  
Mohammed Raji, M.D. (Tabriz U.), *Assistant Professor of Radiology (Diagnostic)*.  
Vadrevu K. Raju, M.B.B.S. (Andhira Med. C.), *Assistant Professor of Ophthalmology*.  
Humayun Rashid, M.B.B.S. (U. Panjab), *Clinical Instructor in Surgery*.  
Richard C. Rashid, M.D. (WVU), *Clinical Associate Professor of Family Practice and Clinical Assistant Professor of Ophthalmology*.  
Gerald A. Ravitz, M.D. (WVU), *Clinical Assistant Professor of Urology*.  
Mark J. Reasor, Ph.D. (J. Hopkins U.), *Associate Professor of Pharmacology and Toxicology*.  
Robert W. Rectenwald, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine)*.  
Stephen C. Rector, M.D. (U. Minn.), *Instructor in Surgery (Emergency Room)*.  
Joseph B. Reed, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
Robert J. Reed, M.D. (U. Penn.), *Clinical Assistant Professor of Surgery*.  
Robert B. Reger, M.S. (WVU), *Adjunct Instructor in Community Medicine*.  
Charles E. Reier, M.D. (Jeff. Med. C.), *Clinical Professor of Anesthesiology*.  
Frank D. Reilly, Ph.D. (U. Cincin.), *Associate Professor of Anatomy*.  
Martin D. Reiter, M.D. (Jeff. Med. C.), *Clinical Professor of Medicine (Comprehensive Medicine)*.  
Ole W. Renick, M.D. (Med. C. Va.), *Clinical Assistant Professor of Otolaryngology*.  
Joseph J. Renn, III, M.D. (WVU), *Associate Professor of Medicine (Pulmonary Medicine)*.  
Harold Resnick, Ph.D. (U. Iowa), *Adjunct Professor of Biochemistry*.  
William C. Revercomb, M.D. (Columbia U.), *Clinical Associate Professor of Medicine (Comprehensive Medicine)*.  
Randall W. Reyer, Ph.D. (Yale U.), *Professor of Anatomy*.  
Joung Wye Rhee, M.D. (Seoul Nat'l. U.), *Clinical Assistant Professor of Pediatrics*.  
Joe W. Rhudy, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine)*.  
Thomas L. Ritz, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
Samuel K. Roberts, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.  
Patrick A. Robinson, M.D. (Wayne St. U.), *Assistant Professor of Medicine, Charleston Division*.  
Robert L. Robinson, Ph.D. (U. Kans.), *Professor of Pharmacology and Toxicology*.  
Joan Robison, Ph.D. (U. Ga.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
Satyabhilashi P. Rochlani, M.B.B.S. (U. Madras), *Associate Professor of Pathology*.  
Jeanne A. Rodman, M.D. (U. Iowa), *Clinical Associate Professor of Anesthesiology*.  
Nathaniel F. Rodman, M.D. (U. Penn.), *Professor and Chairperson of Pathology*.  
Clinton L. Rogers, M.D. (U. Md.), *Clinical Associate Professor of Radiology (Diagnostic)*.  
John S. Rogers, M.D. (Geo. Wash. U.), *Associate Professor of Medicine (Hematology/Oncology)*.  
Carl J. Roncaglione, M.D. (Med. C. Va.), *Clinical Associate Professor of Orthopedic Surgery*.  
Stanley G. Rosenblatt, M.D. (Jeff. Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic)*.  
Jean D. Ross, M.D. (Harvard U.), *Associate Professor of Pediatrics, Charleston Division*.  
William B. Rossman, M.D. (Ind. U.), *Clinical Professor of Behavioral Medicine and Psychiatry*.  
Robert S. Salisbury, M.D. (WVU), *Clinical Assistant Professor of Pathology*.  
Ujjal S. Sandhu, M.B.B.S. (Calcutta Nat'l. Med. Inst.), *Clinical Assistant Professor of Obstetrics and Gynecology*.



Michael A. Santer, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology)*.  
David A. Santrock, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery*.  
Dennis F. Saver, M.D. (Med. C. Pa.), *Clinical Instructor in Family Practice*.  
Paul D. Saville, M.D. (St. Geo. Med. Sch., Lond.), *Clinical Professor of Medicine (Rheumatology)*.  
Ronald A. Savrin, M.D. (SUNY—Upstate), *Assistant Professor of Surgery*.  
John J. Schaefer, M.D. (N.Y. Med. C.), *Clinical Associate Professor of Surgery*.  
Martin W. Schein, Sc.D. (J. Hopkins U.), *Clinical Professor of Behavioral Medicine and Psychiatry*.  
Franklin G. Schiebel, M.D. (U. Mex.), *Instructor in Anesthesiology and Neurological Surgery*.  
Ronald R. Scobbo, M.D. (WVU), *Clinical Associate Professor of Medicine (Comprehensive Medicine)*.  
Narinder N. Sehgal, M.B.B.S. (Panjab U., India), *Associate Professor of Obstetrics and Gynecology; Chief of Obstetrics and Gynecology, Charleston Division*.  
Richard J. Seime, Ph.D. (U. Minn.), *Associate Professor of Behavioral Medicine and Psychiatry*.  
Harold Selinger, M.D. (N.Y. St. U. C. Med.), *Clinical Professor of Medicine (Comprehensive Medicine)*.  
Martin J. Sepulveda, M.D. (Harvard U.), *Adjunct Instructor in Medicine (Pulmonary Medicine)*.  
Jose M. Serrato, M.D. (Nat'l. U. Colombia), *Clinical Instructor in Urology*.  
Edmund G. Settle, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
James K. Sexton, M.D. (Wk. Forest U.), *Clinical Associate Professor of Radiology (Diagnostic)*.  
Samir Shabb, M.D. (Am. U. Beirut), *Clinical Associate Professor of Surgery*.  
Tahir Shafi, M.B.B.S. (Nuhtar Med. C.), *Clinical Associate Professor of Medicine (Nephrology)*.  
Shilbala (Sheila) Shah, M.D. (Seth G. S. Med. C.), *Associate Professor of Pathology (Clinical Pathology)*.  
Stanley R. Shane, M.D. (U. Kans.), *Professor of Medicine; Section Chief of Metabolism and Endocrinology; Associate Chairperson, Medicine*.  
Harry L. Shannon, M.D. (Tulane U.), *Clinical Assistant Professor of Urology*.  
Anne W. Sharpe, B.S. (WVU), *Assistant Professor of Medical Technology*.  
George A. Shawkey, M.D. (Northwestern U.), *Clinical Associate Professor of Pediatrics*.  
Thomas K. Shehan, D.V.M. (Ohio St. U.), *Associate Professor of Pathology; Coordinator, Comparative Pathology (Animal Quarters)*.  
Lauralee Sherwood, D.V.M. (Mich. St. U.), *Associate Professor of Physiology*.  
Earle Shoub, B.S. (Poly. Inst. Brooklyn), *Adjunct Associate Professor of Anesthesiology*.  
Jeffrey S. Shultz, M.D. (WVU), *Associate Professor of Medicine; Chief of Medicine, Wheeling Division*.  
Richard H. Sibley, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery*.  
Leslie D. Simmons, M.D. (Tulane U.), *Clinical Professor of Family Practice*.  
William P. Sinclair, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice*.  
Wilbur Z. Sine, M.D. (WVU), *Clinical Assistant Professor of Family Practice and Behavioral Medicine and Psychiatry*.  
Joseph T. Skaggs, M.D. (U. Louisville), *Clinical Associate Professor of Medicine (Comprehensive Medicine)*.  
John M. Slack, Ph.D. (U. Minn.), *Professor Emeritus of Microbiology*.  
Stephen T. Slack, Ph.D. (Penn St. U.), *Associate Professor of Radiology; Section Chief of Radiation Safety*.  
Clark K. Sleeth, M.D. (U. Chicago), *Professor Emeritus of Medicine and Family Practice*.  
Raymond A. Sleszynski, M.D. (Georgetown U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
David H. Smith, M.D. (U. Alberta), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
David J. Smith, Ph.D. (WVU), *Associate Professor of Anesthesiology and Pharmacology and Toxicology*.  
James T. Smith, M.D. (U. Kans.), *Clinical Assistant Professor of Radiology (Diagnostic)*.  
Larry C. Smith, M.D. (Med. C. Va.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
Ralph S. Smith, Jr., M.D. (Northwestern U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
Robert Leslie Smith, M.D. (U. Ill.), *Associate Professor of Community Medicine and Assistant Dean, School of Medicine (Continuing Education)*.  
George E. Snider, M.D. (WVU), *Clinical Instructor in Otolaryngology*.  
Irvin S. Snyder, Ph.D. (U. Kans.), *Professor and Chairperson of Microbiology*.  
Irvin M. Sopher, M.D. (U. Md.), *Clinical Professor of Pathology*.  
William G. Sorenson, Ph.D. (U. Tex), *Adjunct Assistant Professor of Microbiology*.  
Suzanne S. Souther, B.S. (WVU), *Clinical Instructor in Physical Therapy*.  
James T. Spencer, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Otolaryngology*.  
Wayne Spiggle, M.D. (Med. C. Va.), *Clinical Instructor in Medicine (Hematology/Oncology)*.

Aaron Spital, M.D. (Med. C. Wisc.), *Assistant Professor of Medicine (Nephrology).*  
 Frederick T. Sporck, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Philip M. Sprinkle, M.D. (U. Va.), *Professor and Chairperson of Otolaryngology.*  
 David J. Srebalus, Ed.D. (Ind. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Charles Staab, M.D. (U. Pitt), *Clinical Assistant Professor of Pediatrics.*  
 Edwin P. Stabins, M.D. (Cornell U.), *Clinical Professor of Pediatrics.*  
 Michael Staggers, B.S.P.T. (WVU), *Clinical Instructor in Physical Therapy.*  
 Eugene L. Staples, M.H.A. (U. Minn.), *Clinical Professor of Community Medicine and Behavioral Medicine and Psychiatry; Administrator, University Hospital.*  
 Ellen F. Starkey, M.S. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
 William T. Stauber, Ph.D. (Rutgers U.), *Assistant Professor of Physiology.*  
 Vilja K. Stein, M.D. (U. Penn), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Larry J. Stemple, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Margaret Stemple, M.D. (Rush Med. C.), *Clinical Assistant Professor of Family Practice.*  
 James M. Stevenson, M.D. (WVU), *Professor and Chairperson of Behavioral Medicine and Psychiatry; Professor of Medicine; Section Chief of Behavioral and Ambulatory Medicine.*  
 J. Clifford Stickney, Ph.D. (U. Minn.), *Professor Emeritus of Physiology.*  
 Robert E. Stitzel, Ph.D. (U. Minn.), *Professor and Associate Chairperson of Pharmacology and Toxicology.*  
 David A. Stoll, M.D. (U. Iowa), *Clinical Instructor in Orthopedic Surgery.*  
 Robert E. Stone, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Wade B. Stoughton, M.D. (WVU), *Clinical Assistant Professor of Urology.*  
 Robert S. Strauch, M.D. (Case West. Res. U.), *Clinical Instructor in Surgery.*  
 Samuel A. Strickland, M.D. (WVU), *Clinical Assistant Professor of Ophthalmology.*  
 Neil Stronach, M.D. (Med. C. Va.), *Clinical Instructor in Otolaryngology.*  
 Ronald K. Stupar, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Vadakkancheri Subramanian, M.B.B.S. (Madurai Med. C.), *Assistant Professor of Medicine (Hematology/Oncology).*  
 Jackie L. Summers, M.D. (WVU), *Clinical Associate Professor of Urology.*  
 Eduardo M. Suson, M.D. (Cebu Inst. Med.), *Clinical Assistant Professor of Surgery.*  
 Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), *Instructor in Pediatrics.*  
 Lois V. Svoboda, M.D. (U. Chicago), *Adjunct Assistant Professor of Family Practice; Physician, University Health Service.*  
 William B. Svoboda, M.D. (U. Chicago), *Associate Professor of Neurology and Pediatrics.*  
 Danna C. Swan, M.D. (WVU), *Assistant Professor of Family Practice; Physician, University Health Service.*  
 Dennis P. Sweeney, M.D. (U. Minn.), *Assistant Professor of Medicine (Gastroenterology).*  
 Sherri L. Swenson, B.S. (Ohio St. U.), *Clinical Instructor in Physical Therapy.*  
 Zoltan Szalontay, M.D. (U. Zagreb), *Clinical Associate Professor of Radiology.*  
 Ernesto R. Tanguilig, M.D. (U. Philippines), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Thomas J. Tarnay, M.D. (Columbia U.), *Professor of Surgery.*  
 Mary Ellen Tekieli, Ph.D. (U. Okla.), *Clinical Assistant Professor of Otolaryngology.*  
 Barbara L. Tenney, M.D. (Jeff. Med. C.), *Associate Professor of Pediatrics.*  
 Erdogan Tercan, M.D. (Ankara U.), *Clinical Associate Professor of Anesthesiology.*  
 John A. Thomas, Ph.D. (St. U. Iowa), *Professor of Pharmacology and Toxicology; Associate Dean, School of Medicine (Administration).*  
 Herbert A. Thompson, Ph.D. (U. Kans.), *Assistant Professor and Assistant Chairperson of Microbiology.*  
 Stephen Thorngate, M.D. (Case-West. Res. U.), *Clinical Associate Professor of Surgery.*  
 Lawrence B. Thrush, Sr., M.D. (U. Penn), *Clinical Instructor in Surgery.*  
 Lawrence B. Thrush, Jr., M.D. (WVU), *Assistant Professor of Medicine; Section Chief of Allergy and Clinical Immunology.*  
 Peter K. Thrush, M.D., (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Louis W. Tinnin, M.D. (U. Chicago), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 George E. Toma, Jr., M.D. (Ohio St. U.), *Clinical Assistant Professor of Ophthalmology.*  
 Robert Tomhave, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Joseph B. Touma, M.D. (Damascus U.), *Clinical Assistant Professor of Otolaryngology.*  
 Judith A. Traister, Cert. PT (D. T. Watson Sch. of Psy.), *Clinical Instructor in Physical Therapy.*  
 Shirley W. Trammell, M.D. (Tulane U.), *Clinical Assistant Professor of Surgery.*  
 Donald C. Trapp, M.D. (Temple U.), *Clinical Associate Professor of Urology.*  
 John W. Traubert, M.D. (Ohio St. U.), *Professor and Chairperson of Family Practice.*  
 John W. Trenton, M.D. (U. Penn), *Clinical Professor of Surgery.*  
 Robert R. Trotter, M.D. (Temple U.), *Clinical Professor of Ophthalmology.*  
 George P. Tryfiates, Ph.D. (Rutgers U.), *Associate Professor of Biochemistry.*

Kevin Kuen-Ching Tu, Ph.D. (Utah St. U.), *Adjunct Assistant Professor of Pathology.*  
 Pat A. Tuckwiller, M.D. (U. Chicago), *Clinical Professor Emeritus of Medicine.*  
 Christopher C. Tully, M.D. (Med. C. Va.), *Professor Emeritus of Family Practice.*  
 Irma H. Ulrich, M.D. (U. Minn.), *Associate Professor of Medicine (Metabolism-Endocrinology).*  
 Isidro P. Uy, M.D. (U. Santo Tomas), *Clinical Instructor in Pediatrics.*  
 Albert M. Valentine, M.D. (WVU & Med. C. Va.), *Clinical Associate Professor of Medicine (Cardiology).*  
 Velayudhan Vallyathan, Ph.D. (Maharaja Satyriaroa U.), *Adjunct Assistant Professor of Pathology.*  
 Knox Van Dyke, Ph.D. (St. Louis U.), *Professor of Pharmacology and Toxicology.*  
 Angel Vasquez-Lopez, M.D. (U. P.R.), *Professor of Family Practice and Pediatrics.*  
 Carlos Vasquez, M.D. (U. Nacional), *Clinical Assistant Professor of Medicine (Hematology/Oncology).*  
 John S. Veach, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Alfredo C. Velasquez, M.D. (U. Santo Tomas), *Clinical Associate Professor of Surgery.*  
 Robert W. Veltri, Ph.D. (WVU), *Professor of Microbiology and Otolaryngology.*  
 Purushattam L. Verma, M.D. (Nagpur U.), *Clinical Assistant Professor of Pediatrics.*  
 Herbert G. Voelz, Dr.Rer.Nat. (U. Greifswald, Ger.), *Professor of Microbiology.*  
 Edward Voss, Jr., M.D. (U. Buffalo), *Clinical Associate Professor of Surgery.*  
 Thomas G. Wack, M.D. (WVU), *Clinical Instructor in Family Practice.*  
 John A. Wade, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Gregory R. Wagner, M.D. (Einstein C. Med.), *Clinical Instructor in Community Medicine.*  
 Robert H. Waldman, M.D. (Wash. U., St. Lou.), *Professor and Chairperson of Medicine; Professor of Behavioral Medicine and Psychiatry.*  
 Brian K. Walker, M.D. (Cornell U.), *Assistant Professor of Medicine (Hematology/Oncology); Director, Physician's Assistant Program.*  
 David K. Walker, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Elizabeth R. Walker, Ph.D. (WVU), *Assistant Professor of Anatomy.*  
 James H. Walker, M.D. (U. Md.), *Clinical Professor of Surgery.*  
 Albert L. Wanner, M.D. (U. Pitt), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Stephen D. Ward, M.D. (U. Pitt), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Herbert E. Warden, M.D. (U. Chicago), Ph.D. (U. Ill.), *Professor of Surgery.*  
 Carolyn S. Warren, M.D. (Case-West. Res. U.), *Clinical Assistant Professor of Family Practice, Charleston Division.*  
 Stafford G. Warren, M.D. (U. Rochester), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*  
 Alvin L. Watne, M.D. (U. Ill.), *Professor and Chairperson of Surgery; Professor of Behavioral Medicine and Psychiatry.*  
 Carol J. Weaver, M.S. (U. Mo.—KC), *Associate Professor of Physical Therapy.*  
 Deleno H. Webb, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Kenneth C. Weber, Ph.D. (U. Minn.), *Adjunct Professor of Physiology.*  
 Harry S. Weeks, Jr., M.D. (U. Md.), *Clinical Professor of Anesthesiology.*  
 George W. Weinstein, M.D. (SUNY), *Professor and Chairperson of Ophthalmology.*  
 Charles C. Weise, M.D. (U. Penn), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Roland J. Weisser, Jr., M.D. (WVU), *Associate Professor of Family Practice.*  
 William A. Welton, M.D. (U. Md.), *Professor of Medicine; Section Chief of Dermatology.*  
 Stanley Wendkos, M.S. (Temple U.), *Clinical Instructor in Physical Therapy.*  
 David P. Westfall, Ph.D. (WVU), *Professor of Pharmacology and Toxicology.*  
 Robert T. Westmoreland, M.D. (Bowman Gray), *Clinical Associate Professor of Anesthesiology.*  
 Frances D. Wheeler, M.S. (San Fran. St. C.), *Instructor in Behavioral Medicine and Psychiatry.*  
 Charles E. Whitaker, M.D. (U. Pitt), *Clinical Assistant Professor of Otolaryngology.*  
 Bonnie Rose White, B.S. (Alderson-Broadus C.), *Assistant Professor of Medical Technology.*  
 Kenneth L. Wible, M.D. (Jeff. Med. C.), *Associate Professor of Pediatrics.*  
 David W. Wilder, M.D. (U. Ore.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Isiah A. Wiles, M.D. (U. Chi.), *Clinical Associate Professor Emeritus of Community Medicine.*  
 James H. Wiley, M.D. (Med. C. Va.), *Clinical Associate Professor of Orthopedic Surgery.*  
 Ronald L. Wilkinson, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 David H. Williams, M.D. (Cornell U.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Patricia W. Williams, M.D. (WVU), *Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Patrick C. Williams, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 T. Walley Williams, Ph.D. (U. Pitt), *Professor Emeritus of Anatomy.*  
 Robert S. Wilson, M.D. (J. Hopkins U.), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Mary J. Wimmer, Ph.D. (U. N.C.), *Assistant Professor of Biochemistry.*  
 Mosley H. Winkler, M.D. (Med. C. Va.), *Clinical Associate Professor of Ophthalmology.*



George H. Wirtz, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry.*  
 David J. Withersty, M.D. (WVU), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
 Loraine T. Withersty, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 Kathleen Withrow, B.S. (Loma Linda U.), *Clinical Instructor in Physical Therapy.*  
 John J. Wolf, Jr., M.D. (Wk. Forest U.), *Clinical Assistant Professor of Pediatrics.*  
 Diane T. Woodrum, Ed.D. (WVU), *Adjunct Assistant Professor of Pediatrics.*  
 John J. Wurtzbacher, M.D. (WVU), *Assistant Professor of Medicine (Cardiology).*  
 William D. Wyant, M.S.E., M.P.A. (WVU), *Assistant Professor of Community Medicine.*  
 Merrill Wymer, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 David B. Yelton, Ph.D. (U. Mass.), *Associate Professor of Microbiology.*  
 Jeffrey M. Yost, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 George L. Zaldivar, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
 John J. Zarski, Ph.D. (Ohio U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Frank G. Zavisca, M.D. (SUNY—Buff.), Ph.D. (MIT), *Assistant Professor of Anesthesiology.*  
 John F. Zeedick, M.D. (U. Pitt), *Clinical Professor of Anesthesiology.*  
 Steve M. Zekan, M.D. (WVU), *Instructor in Surgery, Charleston Division.*  
 Bernard Zimmermann, M.D. (Harvard U.), Ph.D. (U. Minn.), *Professor of Surgery.*

## School of Nursing

Jo Ann Ashley, R.N., Ed.D. (Columbia U.), *Professor.*  
 Brenda Kay Battles, R.N., M.S. (Tex. Wom. U.), *Instructor.*  
 Shirley K. Bell, R.N., M.S.N. (Wayne St. U.), *Associate Professor.*  
 Joan Bilitski, R.N., M.S.N. (WVU), *Instructor.*  
 Mary Frances Borgman, R.N., Ed.D. (WVU), *Professor; Chairperson, Senior Unit.*  
 Mary Jo Butler, R.N., M.S. (U. Md.), *Assistant Professor; Chairperson, Charleston Unit.*  
 Marie E. Caruso, R.N., M.S. (U. Ariz.), *Instructor.*  
 Doris K. Clearage, R.N., M.S. (U. Ariz.), *Assistant Professor.*  
 Pamela M. Deiriggi, R.N., M.S.N. (WVU), *Instructor.*  
 Patricia A. Diehl, R.N., M.A. (WVU), *Associate Professor.*  
 O. B. Fawley, M.S.W. (WVU), *Adjunct Instructor.*  
 Imogene P. Foster, R.N., M.A. (WVU), *Assistant Professor.*  
 Sharron F. Graham, R.N., M.S. (U. Penn), *Assistant Professor.*  
 Suzanne W. Gross, R.N., M.N.Ed. (U. Pitt), *Assistant Professor; Acting Chairperson, Junior Unit.*  
 Debra L. Harr, R.N., M.P.H. (J. Hopkins U.), *Assistant Professor.*  
 Kathleen Heverley, R.N., M.S. (Boston U.), *Instructor.*  
 Jean M. Hoff, R.N., M.P.H. (U. Pitt), *Associate Professor; Assistant Dean.*  
 Joan R. Howard, R.N., M.S.N. (U. Penn), *Visiting Assistant Professor.*  
 Lorita D. Jenab, R.N., Ed.D. (Columbia U.), *Professor and Dean.*  
 Patricia E. Johnston, R.N., M.S.N. (Ohio St. U.), *Instructor, Charleston Unit.*  
 Christina Joy, R.N., M.S. (U. Colo.), *Instructor.*  
 Judith C. Kandzari, R.N., M.A. (WVU), *Assistant Professor.*  
 Cynthia A. Killackey, R.N., M.S.N., (St. Xavier, IL), *Instructor.*  
 Nancy A. Koontz, R.N., M.S.N. (U. Md.), *Associate Professor.*  
 Mary K. Leonard, R.N., M.S. (Ohio St. U.), *Assistant Professor, Charleston Unit.*  
 Gaynelle McKinney, R.N., M.S.N.Ed. (Ind. U.), *Professor; Chairperson, Continuing Education.*  
 Margaret A. Marcinek, R.N., M.S. (U. Md.), *Assistant Professor.*  
 Kathleen H. Marsland, R.N., M.S. (U. Colo.), *Assistant Professor.*  
 W. Annette Massey, R.N., M.S.N. (Yale U.), *Associate Professor.*  
 Karen E. Miles, R.N., M.S.N. (WVU), *Assistant Professor.*  
 Victoria Miller, R.N., M.S.N. (U. Minn.), *Assistant Professor; Chairperson.*  
 Marsha F. Mitchell, R.N., M.S.N. (WVU), *Instructor.*  
 Rita S. Monohan, R.N., M.S.N. (Duke U.), *Instructor.*  
 Cynthia A. Neely, R.N., M.S. (WVU), *Instructor, Charleston Unit.*  
 Ruth W. O'Brien, R.N., M.N.Ed. (U. Pitt), *Assistant Professor.*  
 Lois E. O'Kelley, R.N., M.S.N. (Wayne St. U.), *Associate Professor.*  
 Sarah H. Ortenzio, R.N., M.S. (U. Md.), *Instructor.*  
 C. Lynne Ostrow, R.N., M.S. (U. Cal.), *Assistant Professor.*  
 Carol M. Patton, R.N., M.S.N. (WVU), *Instructor.*  
 Marjorie R. Phillips, R.N., M.N.Ed. (U. Pitt), *Assistant Professor.*  
 Luz S. Porter, R.N., Ph.D. (NYU), *Professor; Chairperson, Graduate Unit.*  
 Mary Ragsdale, R.N., M.S. (U. Mich.), *Visiting Instructor, Charleston Unit.*

Jacqueline W. Riley, R.N., M.N. (U. Fla.), *Assistant Professor*.  
 Anne M. Rockenstein, R.N., M.S.N.Ed. (Cath. U. Am.), *Associate Professor*.  
 Judith T. Romano, R.N., M.S.N. (WVU), *Instructor*.  
 Kathleen Schoonover, R.N., M.S.N. (WVU), *Instructor, Charleston Division*.  
 Jane A. Shrewsbury, R.N., M.N.Ed. (U. Pitt), *Associate Professor*.  
 Patricia A. Simoni, R.N., M.S.N. (WVU), *Instructor*.  
 Frances G. Snodgrass, R.N., M.A. (WVU), *Instructor, Charleston Unit*.  
 Natalie M. Stafford, R.N., M.N. (U. Pitt), *Associate Professor*.  
 Jacqueline Stemple, R.N., M.S.N. (WVU), *Assistant Professor*.  
 Fredona E. Stenger, R.N., M.S.N. (Boston U.), *Associate Professor*.  
 Margaret Z. Taylor, R.N., M.N.Ed. (U. Pitt), *Associate Professor*.  
 Sheila R. Truby, R.N., M.S. (U. Idaho), *Instructor, Charleston Unit*.  
 Janet F. Wang, R.N., Ph.D. (U. Pitt), *Assistant Professor*.  
 Beverley Zinn, B.S.N. (WVU)), *Instructor*.

# School of Pharmacy

- Scot A. Anderson, B.S. (WVU), *Clinical Instructor*.  
 Louis J. Anile, B.S. (Duquesne U.), *Clinical Instructor*.  
 Irma M. Anido, B.S. (WVU), *Instructor in Pharmacy*.  
 Julia Bailey, B.S. (WVU), *Clinical Instructor*.  
 H. John Baldwin, Ph.D. (Purdue U.), *Professor of Behavioral and Administrative Pharmacy*;  
*Chairperson, Behavioral and Administrative Pharmacy*.  
 James D. Bartsch, B.S. (U. Wisc.), *Clinical Instructor*.  
 Bruce A. Berger, Ph.D. (Ohio St. U.), *Assistant Professor of Behavioral and Administrative Pharmacy*.  
 N. S. Bovenizer, B.S. (Ohio North. U.), *Clinical Instructor*.  
 Calvin C. Brister, Ph.D. (U. Miss.), *Associate Professor of Biopharmacy*.  
 James A. Calemine, B.S. (WVU), *Clinical Instructor*.  
 David M. Caplan, B.S. (WVU), *Clinical Instructor*.  
 Harry A. Comm, B.S. (WVU), *Clinical Instructor*.  
 John E. Corkrean, B.S. (WVU), *Clinical Instructor*.  
 Timothy R. Covington, Pharm.D. (U. Mich.), *Associate Professor of Clinical Pharmacy*; *Coordinator, Clinical Pharmacy Programs*.  
 Stephen D. Crawford, B.S. (WVU), *Clinical Instructor*.  
 R. Scott Criss, B.S. (WVU), *Clinical Instructor*.  
 S. A. Cunningham, C.P.A., B.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration*.  
 David L. Day, M.S. (WVU), *Clinical Instructor*.  
 Lou DeBone, B.S. (Duquesne U.), *Clinical Instructor*.  
 James J. Doyle, B.S. (WVU), *Clinical Instructor*.  
 John J. Egan, B.S. (WVU), *Clinical Instructor*.  
 Robert Flanagan, B.S. (U. Cincin.), *Clinical Instructor*.  
 Jack E. Fruth, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Barbara J. Gastineau, B.S. (WVU), *Clinical Instructor*.  
 Kenneth H. Gianettino, B.S. (WVU), *Clinical Instructor*.  
 Douglas L. Gill, B.S. (WVU), *Lecturer in Pharmacy*.  
 Douglas Glover, M.D. (Emory U.), *Adjunct Associate Professor*.  
 Harry A. Goodykoontz, B.S. (WVU), *Clinical Instructor*.  
 Gwendolyn S. Grant, B.S. (Duquesne U.), *Clinical Instructor*.  
 Willard S. Griffith, B.S. (Cincin. C. Pharm.), *Clinical Instructor*.  
 John W. Griffiths, B.S. (Ohio St. U.), *Clinical Instructor*.  
 Harold H. Harper, M.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration*.  
 Robert E. Hickman, B.S. (U. Cincin.), *Clinical Instructor*.  
 Donald M. Hilligoss, Pharm.D. (Phila. C. Pharm.), *Clinical Assistant Professor*; *Director, Pharmacokinetics Service, Charleston Area Medical Center*.  
 L. Dean Holmes, B.S. (WVU), *Clinical Instructor*.  
 Stephen A. Howard, Ph.D. (U. Mich.), *Associate Professor of Pharmacy*.  
 Robert H. Hoy, Pharm.D. (U. Cal.), *Assistant Professor of Clinical Pharmacy*.  
 Arthur I. Jacknowitz, Pharm.D. (Phila. C. Pharm.), *Associate Professor of Clinical Pharmacy*;  
*Director, Drug Information Center*.  
 Richard Jarvis, B.S. (WVU), *Clinical Instructor*.  
 Robert Johnson, B.S. (U. Iowa), *Clinical Instructor*.  
 Patricia Johnston, B.S. (WVU), *Clinical Instructor*.  
 Deborah B. Jones, B.S. (WVU), *Clinical Instructor*.  
 Ronald Jones, B.S. (WVU), *Clinical Instructor*.  
 Francis Judy, B.S. (WVU), *Clinical Instructor*.  
 Steven Judy, B.S. (WVU), *Clinical Instructor*.  
 Guy Lang, B.S. (WVU), *Clinical Instructor*.  
 James Kai-Jin Lim, Ph.D. (U. N.C.), *Professor of Pharmaceutics*.  
 Robert T. Lindsay, M.S. (Mass. C. Pharm.), *Clinical Instructor*.  
 Robert B. Lowe, Pharm.D. (U. Mich.), *Clinical Associate Professor*.



- Daniel Lusk, B.S. (WVU), *Clinical Instructor*.
- Joseph K. H. Ma, Ph.D. (Duquesne U.), *Associate Professor of Medicinal Chemistry*.
- Carl J. Malanga, Ph.D. (Fordham U.), *Professor of Biopharmacy; Chairperson, Basic Pharmaceutical Sciences*.
- Mary Lou Malanga, B.S. (Fordham U.), *Clinical Instructor*.
- Carroll Martin, B.S. (WVU), *Clinical Instructor*.
- Robert H. Matheny, B.S. (WVU), *Clinical Instructor*.
- John W. Mauger, Ph.D. (U. R.I.), *Professor of Pharmacy; Coordinator, Graduate Program*.
- Kenneth F. McNeil, M.S. (U. S. Calif.), *Adjunct Assistant Professor*.
- Ronald W. Meredith, B.S. (WVU), *Clinical Instructor*.
- Vernon R. Midcap, B.S. (WVU), *Clinical Instructor*.
- ✓ Sylvia Miles, Pharm.D. (Med. U. S.C.), *Clinical Assistant Professor*.
- John E. Miller, B.S. (WVU), *Clinical Instructor*.
- Richard P. Miller, Ph.D. (U. Iowa), *Associate Professor of Biopharmaceutics*.
- Kenneth Muha, B.S. (U. Ga.), *Clinical Instructor*.
- Frank D. O'Connell, Ph.D. (Purdue U.), *Acting Dean and Professor of Pharmacognosy*.
- John P. O'Donnell, Ph.D. (U. Iowa), *Associate Professor of Medicinal Chemistry*.
- Robert B. Pierce, B.S. (WVU), *Clinical Instructor*.
- John P. Plummer, B.S. (WVU), *Clinical Instructor*.
- William Plyburn, B.S. (U. Cincin.), *Clinical Instructor*.
- ✓ Charles D. Ponte, Pharm.D. (U. Utah), *Assistant Professor of Clinical Pharmacy*.
- Terrence S. Prettyman, B.S. (WVU), *Clinical Instructor*.
- ✓ Woodrow J. Proveaux, Pharm.D. (U. Mich.), *Assistant Professor of Clinical Pharmacy*.
- David A. Riley, Ed.D. (U. Ga.), *Associate Professor of Behavioral and Administrative Pharmacy; Coordinator of Continuing Education*.
- Paul Ritchie, B.S. (WVU), *Clinical Instructor*.
- Randall K. Robinson, B.S. (U. Ky.), *Clinical Instructor*.
- Harry Scott, B.S. (WVU), *Clinical Instructor*.
- Kathryn Sensabaugh, B.S. (WVU), *Lecturer in Clinical Pharmacy*.
- A. Ray Shaw, B.S. (WVU), *Clinical Instructor*.
- Clara Fay G. Skarzenski, B.S. (WVU), *Instructor in Pharmacy*.
- Maynard Slaven, B.S. (WVU), *Clinical Instructor*.
- Benton B. Smith, B.S. (WVU), *Clinical Instructor*.
- Everett B. Stanley, B.S. (WVU), *Clinical Instructor*.
- ✓ Gilbert A. Steiner, Pharm.D. (Wayne St. U.), *Assistant Professor of Clinical Pharmacy*.
- Robert Stout, B.S. (WVU), *Clinical Instructor*.
- Eugene S. Stratford, Ph.D. (Ohio St. U.), *Associate Professor of Medicinal Chemistry*.
- Basil G. Swisher, M.S. (WVU), *Adjunct Instructor in Pharmacy Administration*.
- Robert H. Taylor, B.S. (WVU), *Clinical Instructor*.
- ✓ Monika Tonkovich, Pharm.D. (SUNY), *Clinical Instructor*.
- Edward A. Toompas, B.S. (WVU), *Clinical Instructor*.
- Charles Turk, B.S. (WVU), *Clinical Instructor*.
- Irvin VanMeter, B.S. (WVU), *Clinical Instructor*.
- Patricia A. Weaver, B.S. (Duquesne U.), *Clinical Instructor*.
- Albert F. Wojcik, Ph.D. (U. Pitt), *Professor of Pharmacy Administration*.
- Fred L. Zicafoose, B.S. (WVU), *Clinical Instructor*.
- John F. Ziolkowski, M.S. (Brooklyn C. Pharm.), *Clinical Instructor*.

## Medical Center Staff

Marguerite E. Abel, B.S.L.S. (U. Ill.), *Assistant Librarian*.  
John Ambrose, *Superintendent, Maintenance*.  
Maureen Conley, M.S.L.S. (U. Pitt), *Network Librarian*.  
Elizabeth S. Furfari, B.S.J. (WVU), *Information Officer*.  
Barbara L. Gould, M.A. (J. Hopkins U.), *Supervisor, Medical Illustration*.  
Harold H. Harper, M.S. (WVU), *Assistant to Vice-President—Health Sciences*.  
Gloria J. Heard, *Supervisor, Biomedical Photography*.  
Linda M. Jacknowitz, M.S.L.S. (SUNY), *Audiovisual Librarian*.  
Lee E. McIntyre, *Supervisor, Electronics Laboratory*.  
J. Allyson McKee, M.S.L.S. (U. Pitt), *Technical Services Librarian*.  
Fred S. Marsteller, *Supervisor, Audiovisual Television*.  
Robert L. Murphy, M.S.L.S. (Cath. U. Am.), *Director, Medical Center Learning Resources Center*.  
Irene J. Roby, *Assistant to Dean, Admissions and Records*.  
J. Richard Toren, B.S.J. (WVU), *Associate Director, Public Affairs/Medical Center News Service*.  
Mary Ellin Wylie, B.A. (WVU), *Information Officer*.

## University Hospital

Eugene L. Staples, M.H.A. (U. Minn.), *Administrator*.  
Douglas A. Clark, M.H.A. (U. Minn.), *Associate Administrator*.  
Charles E. Flink, M.B.A. (WVU), *Associate Administrator*.  
Bernard G. Westfall, M.B.A. (WVU), *Associate Administrator*.  
Michael J. Stein, M.H.A. (Duke U.), *Assistant Administrator*.  
Anna Moson, M.Litt. (U. Pitt), *Director, Nursing Service*.  
Virginia H. Nugent, *Administrative Assistant*.  
Helen M. Dorohovich, *Director of Volunteers*.  
Pamela C. Shier, M.Div. (Episcopal Div. Sch., Mass.), *Hospital Chaplain*.

## Department Heads

*Clinical Laboratories*, Richard M. Iammarino, M.D. (Loyola U., Chi.)  
*Dietary*, Margaret P. Abbott, M.P.H. (U. Minn.)  
*Hospital Computer Systems*, Robert R. Smith  
*Housekeeping/Laundry*, Marc Connelly  
*Medical Records*, Jeffrey M. Stull, B.A. (WVU)  
*Nursing Service*, Kathleen A. Moore, B.S. (Alderson-Broadbent C.), *Associate Director*; Joan Berry, R.N., and Jaretta Faust, R.N., *Assistant Directors*  
*Pathology*, Nathaniel F. Rodman, M.D. (U. Penn)  
*Pharmacy*, Sylvia Miles, Pharm.D. (Med. U. S.C.)  
*Physical Therapy*, Sandy C. Burkhart, Ph.D. (WVU)  
*Radiology*, Orlando F. Gabriele, M.D. (Yale U.)  
*Social Service*, Don E. Killen, M.S.W. (U. Pitt)  
*Student Health Service*, Edwin J. Morgan, M.D. (U. Pitt)

# 1981

JANUARY	FEBRUARY	MARCH	APRIL
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
MAY	JUNE	JULY	AUGUST
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

# 1982

JANUARY	FEBRUARY	MARCH	APRIL
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
MAY	JUNE	JULY	AUGUST
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31





WVU Medical Center

COVER: WVU Medical Center (University Hospital, left; Basic Sciences Building, right).

Sculptured pylons in front of the Basic Sciences Building depict milestones in the health sciences.



The Personal Rapid Transit (PRT) system, featuring driverless, electric-powered, computer-directed cars, serves the Medical Center and the Evansdale and Downtown campuses, and the central business district of Morgantown.

# **West Virginia University Medical Center 1982-83 Catalog**

---

## **Medical Center Basic Sciences School of Dentistry**

**Dental Hygiene**

## **School of Medicine**

**Medical Technology**

**Physical Therapy**

## **School of Nursing**

## **School of Pharmacy**

Edited by Stanley J. Nels  
*Associate University Editor*

The 1982-83 West Virginia University Medical Center Catalog is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. The courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Board of Regents, University administrators, and the faculties of schools and colleges in order to best meet the goals and objectives of the University. The University therefore reserves the right to change, delete, supplement or otherwise amend at any time the information, course offerings, requirements, rules, and policies contained, herein without prior notice.



West Virginia University is an Equal Opportunity-Affirmative Action institution. In compliance with Federal Executive Order No. 11246 as amended, Title VII of the Civil Rights Act, West Virginia Human Rights Act Title IX (Educational Amendments of 1972), Sections 503 and 504 of the Rehabilitation Act of 1973, and other applicable laws and regulations, the University provides equal opportunity to all prospective and current members of the student body, faculty, and staff on the basis of individual qualifications and merit without regard to race, sex, religion, age, national origin, or handicap, as identified and defined by law.

The University neither affiliates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, color, age, religion, sex, national origin, or handicap, as defined by applicable laws and regulations. —Office of the President

## **West Virginia Board of Regents**

**950 Kanawha Boulevard, East**

**Charleston, WV 25301**

Andrew L. Clark, Princeton  
Sue Seibert Farnsworth, Wheeling  
Clark B. Frame, Morgantown  
Paul J. Gilmer, Charleston  
Russell L. Isaacs, Charleston  
Betsy K. McCreight, Huntington  
John W. Saunders, Beckley  
Verl W. Snyder, Berkeley Springs  
William E. Watson, Wellsburg  
Margaret T. Byrer, ex officio, Shepherdstown  
Kenneth L. Jones, ex officio, Clintonville  
Roy Truby, ex officio, Charleston  
Robert R. Ramsey, Jr., *Chancellor*, Charleston

## **West Virginia University Board of Advisors**

**Office of the President**

**Morgantown, WV 26506**

J. Reginald Dietz, *Chairman*, Weirton  
James H. Harless, *Vice-Chairman*, Gilbert  
Joseph R. Goodwin, Charleston  
Robert E. Maxwell, Elkins  
Hazel L. Ruby McQuain, Morgantown  
Charles C. Wise, Jr., Charleston  
William E. Collins, *Presidential Administrative Appointee*  
William M. Hinchey, *Student Representative*  
Boyd D. Holtan, *Faculty Representative*  
Paul R. Martinelli, *Classified Staff Representative*  
E. Gordon Gee, *President*

West Virginia University Bulletin (USPS 676-980) (ISSN 0362-3009)

Series 82, No. 8-1, February, 1982

Issued Monthly in January, February, April, and October;  
four times in March; and twelve times in June.

Second-class postage paid at Morgantown, WV 26505  
and at additional mailing offices.

POSTMASTER: Send Form 3579 to  
West Virginia University, Morgantown, WV 26506.

# Contents

University Calendar, 1982-83 .....	4
West Virginia University Medical Center .....	5
University Hospital .....	6
Radiologic Technology .....	6
Coordinated Undergraduate Dietetics Program .....	6
Dental Clinic .....	7
University Health Service .....	7
Library .....	7
Admissions .....	8
Admission to WVU Medical Center Programs .....	8
Admission to West Virginia University .....	8
Admission of Transfer Students .....	10
Admission of Special Students .....	11
Admission of Post-Baccalaureate Students .....	11
Admission of Foreign Students .....	11
Admission of Veterans .....	13
Readmission .....	13
Fees and Expenses .....	14
Health Sciences Programs at WVU .....	14
Residential Status for Admission and Fee Purposes .....	18
Regulations Affecting Degrees .....	20
Medical Center Basic Sciences .....	36
Anatomy .....	36
Biochemistry .....	39
Conjoined Basic Sciences Courses .....	41
Microbiology .....	42
Pathology .....	45
Pharmacology and Toxicology .....	46
Physiology .....	48
School of Dentistry .....	51
Doctor of Dental Surgery Program .....	52
Endodontic Program .....	65
Orthodontic Program .....	67
Dental Hygiene Program .....	69
School of Medicine .....	73
Medical Technology .....	88
Division of Physical Therapy .....	95
School of Nursing .....	99
School of Pharmacy .....	109
Faculty and Staff .....	120

# University Calendar, 1982-83

## Summer Sessions, 1982

May 19, Wednesday	Registration, First Summer Session
May 19, Wednesday	First Classes
May 19, Wednesday	Malcolm X's Birthday—Day of Special Concern
May 31, Monday	Memorial Day Recess
June 30, Wednesday	Last Classes
June 30, Wednesday	Registration, Second Summer Session
July 1, Thursday	First Classes
July 5, Monday	Independence Day Recess
August 12, Thursday	Last Classes

## First Semester, 1982-83

August 19, 20, Thursday and Friday	New Student Orientation
August 20, Friday	General Registration
August 23, Monday	First Classes
September 6, Monday	Labor Day Recess
September 18-19, Saturday and Sunday	Rosh Hashanah— Days of Special Concern
September 27, Monday	Yom Kippur—Day of Special Concern
October 8, Friday	Mid-Semester
October 8, Friday	Mid-Semester Reports Due
November 20, Saturday, to November 28, Sunday, incl.	Thanksgiving Recess
December 10, Friday	Last Classes
December 13, Monday, to December 18, Saturday, incl.	Final Examinations
December 19, Sunday, to January 6, Thursday, incl.	Christmas Recess

## Second Semester, 1982-83

January 7, Friday	General Registration
January 10, Monday	First Classes
January 15, Saturday	Martin Luther King's Birthday— Day of Special Concern
February 21, Monday	Washington's Birthday Recess
February 25, Friday	Mid-Semester
February 25, Friday	Mid-Semester Reports Due
March 26, Saturday, to April 4, Monday, incl.	Spring Recess
April 1, Friday	Good Friday—Day of Special Concern
April 4, Monday	Easter Recess
April 12, Tuesday	Faculty Assembly
April 29, Friday	Last Classes
May 2, Monday, to May 7, Saturday, incl.	Final Examinations
May 9, Monday	Grade Reports for All Graduates Due in Dean's Office
May 10, Tuesday	Dean's Reports for All Graduates Due in Office of Admissions and Records
May 14, Saturday	Alumni Day
May 15, Sunday	Commencement

*The academic year is divided into two semesters of approximately seventeen weeks each and summer sessions.*



# West Virginia University Medical Center

Now in its third decade, the West Virginia University Medical Center continues its dedication to the improvement of health care in West Virginia through education, service, and research.

In 1957, only 113 students were enrolled in health sciences classes at the Medical Center. Today, there are nearly 1,500 in dentistry, medicine, nursing, pharmacy, and related health fields.

Classroom and clinical facilities have been expanded to include the Charleston Division of the WVU Medical Center and the Wheeling Division of the School of Medicine. The outreach programs from the Morgantown campus and these divisions influence health care in every area of the state.

A tertiary care center for high risk maternity and child care, and a pioneer in the state in establishing an intensive care unit for ill newborns, the Medical Center was a leader in the State Health Department's program to reduce infant mortality. The number of infants dying during their first year in West Virginia is now below the national average after being near last ten years ago.

As a center for continuing education, the Medical Center through its faculty and library facilities has disseminated information on latest health care methods and techniques to physicians and other health professionals in all sections of the state.

Before University Hospital was completed in 1960, medical technologists and pharmacists were the only health professionals who could obtain all their education at WVU. Medicine offered only a two-year program and nursing and dentistry none. Construction of the Medical Center was authorized in 1951 by the Legislature which also levied a penny-a-bottle tax on soft drinks to provide basic financing.

The WVU Medical Center was planned as a single structure—Basic Sciences Building and University Hospital under one roof. The Basic Sciences portion opened in 1957; dentistry graduated its first class in 1961, medicine in 1962. Dentistry now enrolls 308 students including 98 in the department of dental hygiene, medicine 345, nursing 360, and pharmacy 187 in the three-year professional program. Medical technology and physical therapy number 36 students each. There are 177 graduate students in the basic sciences, dentistry, medical technology, nursing, and pharmacy. There are also 177 postdoctoral residents in medicine.

The Charleston Division of the WVU Medical Center was established in 1972 by an agreement between WVU and the Charleston Area Medical Center, the state's largest hospital complex. The \$6 million Education Building was opened in 1977 as the center for clinical education programs. The Charleston Division expands the patient base and student capacity for WVU's education programs. It serves students in dentistry, medicine, nursing, pharmacy, and allied health fields and offers postgraduate specialty training.

Nonacademic policies and regulations affecting students are summarized in the *Student Handbook*. Every student is urged to obtain a copy of the *Student Handbook* from the Division of Student Affairs, 205 Moore Hall.

The Wheeling Division was established in 1974 in cooperation with the Ohio Valley Medical Center and Wheeling Hospital. The program is overseen by a joint Wheeling Area Medical Education Committee and offers elective opportunities for four-year medical students and postgraduate specialty training.

## **University Hospital**

West Virginia University Hospital is a 445-bed health center where education of students and advancement of knowledge goes hand in hand with the best in medical care. It is the hub of the Medical Center complex, providing the training ground where students learn the science and art of caring for patients.

Services in some 50 specialties are provided for bed patients as well as through clinics where more than 2,000 patients are seen weekly. Emergency Room service is provided around the clock, with more than 39,000 visits recorded annually.

Patients come to University Hospital and the clinics from all parts of West Virginia. They find expertise, equipment, and experience sometimes not available at other West Virginia hospitals, in areas such as pain control, bladder pacemakers, radiation therapy, pediatric surgery, and cleft palate repair.

Clinic management operations have been streamlined to meet a growing public demand for efficient, quality, personalized health care. All internal medicine subspecialty clinics have been merged into a new Group Medicine Clinic, providing a multidisciplinary team to handle almost any health problem. This outstanding clinic program has won the support of the Robert Wood Johnson Foundation with a \$783,000 four-year grant, one of 15 awarded among 51 competitors. Other recipients included university hospitals at Vanderbilt, Yale, Johns Hopkins, UCLA, Georgetown, and the University of California at San Francisco.

## **Radiologic Technology**

A two-year course for radiologic technologists is offered by the Department of Radiology at University Hospital. This course covers anatomy and physiology, radiologic physics, radiographic techniques, radiation therapy, radioisotopes, medical terminology, nursing procedures, administration and professional ethics. Subjects taken do not carry WVU credit, but provision to transfer course work under the Board of Regents bachelor of arts program may be pursued. Practical experience is gained on assigned tours of duty under the supervision of staff members.

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee. Students provide their own lodging and meals.

Students completing the program are awarded a certificate and are eligible to take the American Registry Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Training, Department of Radiology, West Virginia University Hospital, Morgantown, WV 26506.

## **Coordinated Undergraduate Dietetics Program**

The Coordinated Undergraduate Dietetics Program is sponsored jointly by the Department of Family Resources (College of Human Resources and

Education) and University Hospital. The program offers diverse learning opportunities through academic courses in various divisions of the University and the Medical Center, and clinical experience in hospitals and community agencies.

After successful completion of the four-year program the student is awarded the degree of Bachelor of Science (B.S.) with a major in dietetics from the Department of Family Resources, College of Human Resources and Education. Clinical experience during the period of study enables the graduate to become a member of the American Dietetics Association without an additional internship period and eligible for the Registration Examination.

The student enters the program at the beginning of the junior year.

To qualify for application a candidate must have completed prescribed courses, with at least a 2.5 overall grade-point average—2.25 in science courses and 3.0 in nutrition and foods courses.

Final acceptance in the Coordinated Undergraduate Dietetics Program is subject to approval by the Admission Committee. An interview with the committee is required. *Enrollment is limited and priority will be given West Virginia residents.*

## **Dental Clinic**

Clinical training and experience constitute a major part of the curriculum for dental students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student is assigned to a patient and must work under close supervision of a faculty member. The clinic program provides practical experience for the student and a much needed service to several thousand patients annually.

## **University Health Service**

The University Health Service provides primary medical care for WVU students, faculty, and staff. Each regularly enrolled student pays a fee which covers medical consultation and treatment at the Health Service on the ground floor of University Hospital, or in the hospital's Emergency Room when the Health Service is closed. It also covers limited payment for inpatient care at University Hospital. A voluntary insurance plan is available to students to cover the cost of inpatient and outpatient services beyond primary care. Students are strongly advised to obtain it. Details are available in a Health Service brochure.

## **Library**

The Medical Center Library, a part of the Medical Center Learning Resources Center, serves the students, faculty, and staff of the four schools and University Hospital. Its services are available to health professionals throughout West Virginia and to the general public when needed.

The library in the Basic Sciences Building contains approximately 130,000 bound volumes. More than 2,500 domestic and foreign periodicals are currently received.

The Medical Center Library and the central University Library maintain an active interlibrary loan service. Material not in either library may be borrowed from libraries in other cities.



The library is open, except on holidays, from 8:00 a.m. to midnight, Monday through Thursday; from 8:00 a.m. to 11:00 p.m., Friday; from 9:00 a.m. to 5:00 p.m., Saturday; and from 2:00 p.m. to 11:00 p.m., Sunday. Changes in scheduled hours are posted in advance.

## **Admissions**

### **Admission to WVU Medical Center Programs**

Applicants for admission to any of the schools of the WVU Medical Center should write to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, who will furnish official blanks upon which formal application must be made.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

When requesting an application by letter for any of the Medical Center programs, the permanent home address must be given.

A \$10.00 application fee is required and must accompany the applications of all but Dental Hygiene students, who pay no application fee.

Any applicant who is refused admission, or who fails to enroll after acceptance, must re-apply in the regular manner if consideration for a subsequent year is desired.

Those applicants accepted for admission to any of the programs of the WVU Medical Center, except the Division of Dental Hygiene and out-of-state applicants to the School of Dentistry, are required to deposit \$50.00 before acceptance becomes official. Applicants accepted to the Division of Dental Hygiene deposit \$40.00, and out-of-state applicants accepted to the School of Dentistry deposit \$100. If the applicant enrolls in the program of the applicant's choice, the deposit is applied to first-semester tuition.

If an application for admission to the School of Medicine is withdrawn after the applicant has been offered a place and has submitted a deposit, such deposit may be refunded any time before March 30 of the year in which enrollment is anticipated, but will not be refunded after this date. Deposits submitted to all other programs are nonrefundable.

It is required that during the first semester of the first year all WVU Medical Center students must complete certain prescribed immunization and diagnostic procedures.

### **Admission to West Virginia University**

Students may be considered for admission to WVU on the basis of graduation and transcripts from accredited high schools. High school graduates are required to present credit for 4 units of English and 1 unit of algebra. In addition, the health sciences require 1 unit of geometry.

(Special admissions regulations for individual WVU Medical Center schools appear in subsequent pages of this *Catalog*.)

All students are required to take the American College Testing (ACT) Program tests and have the report of scores sent to WVU prior to the admission decision, and no other test may be substituted for it.

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools or from the College Scholarship Service, or the WVU Financial Aid Office. Submit only forms dated for the current academic year.

(*Your Guide to Financial Aid—West Virginia University* is available at the WVU Financial Aid offices, in the Mountainlair, Downtown Campus, and in 104 Basic Sciences Building, Medical Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.)

West Virginia high school students should obtain applications for admission from their high schools. Out-of-state students may write the WVU Office of Admissions and Records and request an application form. Applicants should prepare their part of the application and then return it to their school. The school then will send the completed application and transcript of the student's high school grades directly to the WVU Office of Admissions and Records.

Students should apply for admission when they have met these requirements—

*West Virginia Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above) and has taken the ACT test, the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.0 of a possible 4.0 (C or above) and has taken the ACT test, the student should apply as soon as possible after beginning the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation and has taken the ACT test, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the high-school evaluation report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the General Educational Development (GED) examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

*Out-of-State Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 3.0 of a possible 4.0 (B or above) and has taken the ACT test, the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above) and has taken the ACT test, the student should apply as soon as possible after the beginning of the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation and has taken the ACT test, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the high-school evaluation report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the GED examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

## **Admission of Freshman Students (Effective First Semester, 1983-84)**

Students will be considered for admission to West Virginia University on the basis of graduation and submission of transcripts from accredited high schools and ACT test results.

High school graduates are required to present the following minimum credits:

*English:* 4 units required of all students.

*Mathematics:* 2 units minimum (one must be algebra; the other should be algebra or comparably suitable pre-college math) required for all students. *Additional mathematics required for some programs:* 2 units algebra, 1 unit geometry,  $\frac{1}{2}$  unit of trigonometry (or its equivalent) required for freshman admission to engineering and mineral and energy resources majors. Students who do not meet these requirements in mathematics may apply for admission to the Pre-College of Mineral and Energy Resources or General Studies programs in the College of Arts and Sciences to undertake a program of study to prepare them to meet the admissions requirements of the College of Engineering or the College of Mineral and Energy Resources.

Since many majors at the University require algebra as a *minimum* mathematics requirement for admission and/or graduation, it is strongly urged that *all* high school graduates present 2 units of algebra and at least 1 unit of geometry,  $\frac{1}{2}$  unit of trigonometry, and/or 1 unit of applied mathematics.

## **Admission of Transfer Students**

Applicants for transfer from another college or university should submit the following to the Office of Admissions and Records:

1. A complete application for undergraduate admission.
2. An official transcript of all college work attempted to date. An official transcript covering subjects subsequently taken should be sent as soon as possible.
3. Catalog pages describing all subjects which have or will have been completed. The applicant's name should be written on each page and each subject indicated by a check mark in the margin. Complete catalogs should not be sent. (*Not necessary from West Virginia colleges.*)
4. Students transferring to WVU with less than 28 hours are required to have the scores of the ACT test submitted to WVU.

The cumulative average of all work attempted before transfer must be at least C.

Credits and grades earned for all baccalaureate-level courses at any baccalaureate degree-granting institution in the West Virginia state system of higher education and up to 72 hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia state system shall be transferable toward a bachelor's degree. (See also "Requirements As to Residence," page 22.)

Credits (though not grades) are transferable from institutions outside the West Virginia state system for courses carrying a grade of C or higher. A grade of D on the first of sequence courses may be transferred if the second course grade is C or higher.

Credits from two-year community colleges and junior colleges outside the West Virginia state system are limited to 72 hours of lower-division courses.



These colleges must be accredited by the North Central Association of Colleges and Schools or another regional accrediting association.

The transfer of credits does not exempt the student from satisfying all the requirements for the student's degree program at WVU.

All transcripts must be in the Office of Admissions and Records three weeks in advance of registration.

Evaluation of transcripts for transfer of credit is furnished only after receipt of complete official transcripts and application for admission.

Transfer students generally are admitted only after they complete one full year at another institution. Applicants who have less than one full year of college work elsewhere must submit both their college and high school records. Students who have successfully completed 6 hours or less at another accredited institution will apply as freshmen.

**Intrauniversity Transfers**

Students transferring from Potomac State College of WVU shall be considered intrauniversity transfers. All records made at Potomac State College are part of the student's WVU record, but no more than 72 hours may be applied toward the baccalaureate degree.

If a change of major is involved, the transferee should consult the college, school, or department to which the student is transferring concerning requirements for the new major.

**Admission of Special Students**

Persons not desiring to become candidates for a degree may, by special permission, be admitted as special students. Such students are subject in all respects to the usual rules relating to registration and scholarship. Admission to any class is subject to the approval of the instructor in charge.

Students who do not plan to follow a degree program at WVU should submit only a statement of good standing from the last college attended.

**Admission of Post-Baccalaureate Students**

Students having one or more earned degrees from an approved college or university and desiring to enroll for undergraduate credit may be admitted as post-baccalaureate students. Students admitted in this category would not be working toward a graduate degree and credit earned while under this classification would be limited to undergraduate credit. Students admitted as post-baccalaureate, since they are limited to undergraduate credit, would be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an official transcript from the institution granting their latest degree.

**Admission of Foreign Students**

This school is authorized under Federal law to enroll nonimmigrant alien students.

Foreign students wishing to enroll at WVU must comply with all academic requirements stated above in addition to other academic and nonacademic requirements, as follow.

## Early Inquiry and Application

Foreign applicants should forward a letter of inquiry one year before they intend to begin study in the United States. Foreign students who have been granted admission are expected on campus at the beginning of July for a six-week period of orientation and an intensive study of English. The University receives a large number of applications from international students. For this reason, and because of the time required for the student to make visa and financial arrangements, April 1 has been established as a deadline after which applications cannot be processed.

Arrangements for the students' financial obligations to WVU and for their entire stay in the United States should be made before leaving their countries.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## English Proficiency

All foreign applicants whose native language is not English must submit Test of English As a Foreign Language (TOEFL) scores. A minimum of 550 is required for admission. TOEFL information and registration forms are available from the Educational Testing Service, Princeton, NJ 08540 USA. Tests are normally given six times each year. It requires one month to score and report individual test results. Registration for the TOEFL examination closes five weeks before the testing date.

## Credentials

Complete and original official records of all studies undertaken by an applicant at any institution attended (secondary school, college, university, technical school, professional school, etc.), must be provided at time of application for admission to WVU. Copies of original records are acceptable, provided they are officially stamped.

Such records should include: (1) complete dates of attendance; (2) identification of individual subjects; (3) total number of hours in each class per week; (4) total number of weeks each class meets in session; (5) final grade in each subject, for each year; (6) actual credits earned for each subject; (7) class, division, or rank achieved; (8) identification of the individual; (9) explanation of each institution's grading system; and (10) certification, and date, of degree or awards achieved. If any of this information cannot be supplied, an official explanatory statement from the school should be submitted. *(All documents must be accompanied by certified English translations.)*

All documents should be forwarded directly from the registrar or other authorized official of the school to the WVU Office of Admissions and Records.

If an applicant is currently enrolled in a school, tentative admission may be granted on the basis of an incomplete record which indicates the applicant will unquestionably meet the admission standards of WVU. Final admission, however, cannot be approved until the complete record has been received and evaluated.

## **Foreign Students Transferring Within the United States**

Foreign students applying to transfer from schools within the United States will not be admitted and permitted to register at WVU unless they have complied with all transfer procedures as required by the United States Immigration and Naturalization Service (INS).

The school the student was last authorized to attend must have completed and signed the INS form I-538. This, together with a valid I-20 form received from WVU and the I-94 form, must have been submitted to the INS office having jurisdiction over the school the student was last authorized to attend. If the student is not now attending that school, a letter must be added explaining in detail why.

If the INS approves the transfer, this approval will be stamped on the student's I-94. The student must then immediately notify WVU that the transfer has been approved.

Only when these procedures have been completed will WVU undertake to admit and register the student. No student should move to Morgantown without having received this assurance of admission to WVU.

## **Admission of Veterans**

Veterans may be admitted to WVU with less than the minimum admission requirements necessary for other, nonveteran applicants.

Information regarding educational opportunities made possible at the University through provisions of the Veterans Readjustment Benefits Act of 1966—G.I. Bill (Public Law 358), the Vocational Rehabilitation Program of the Veterans Administration (Public Law 16), and the War Orphan's Educational Assistance Act of 1956 (Public Law 634) may be obtained from a financial aid counselor by personal conference at the Financial Aid Office in Mountainlair, or by mail. An amendment to Public Law 634, enacted in 1964, provides benefits to many dependents of 100 percent disabled veterans.

Veterans having at least one continuous year of active military service may receive advanced placement credit for General Physical Education 1 and 2. Proof of such military service must be presented to the Dean of Admissions and Records.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## **Readmission**

Undergraduate students who leave the University for at least one complete semester are required to submit an application for readmission to the Dean of Admissions and Records.

Students who have been suspended from the University must have written approval from the dean of the school or college from which the student was suspended.

Approval in writing must be secured in advance to elect courses offered elsewhere. A cumulative average of C is required in order to obtain such approval. Credit will be accepted for transfer for courses carrying a grade of C or higher when the conditions indicated above have been met.



# Health Sciences Programs At West Virginia University

Degree Program	Bachelor	Master	Doctorate/ Professional
----------------	----------	--------	----------------------------

## School of Dentistry

Dental Hygiene .....	B.S.		
Dentistry .....			D.D.S.
Endodontics .....		M.S.	
Orthodontics .....		M.S.	

## School of Medicine

Anatomy .....	M.S.	Ph.D.
Biochemistry (Medical) .....	M.S.	Ph.D.
Medical Technology .....	B.S.	M.S.
Medicine .....		M.D.
Microbiology (Medical) .....	M.S.	Ph.D.
Pharmacology and Toxicology .....	M.S.	Ph.D.
Physical Therapy .....	B.S.	
Physiology (Medical) .....	M.S.	Ph.D.
Biomedical Sciences .....		Ph.D.*

## School of Nursing

Nursing .....	B.S.N.	M.S.N.
---------------	--------	--------

## School of Pharmacy

Pharmaceutical Sciences .....	M.S.	Ph.D.
Pharmacy .....	B.S.Pharm.	

## University Hospital

Medical Graduate Residencies	
Radiologic Technology .....	Certificate

\*Awarded under the auspices of the degree-granting authority of West Virginia University, but in cooperation with the Basic Sciences Departments of the Marshall University School of Medicine.

Students wishing to change their major upon readmission must have permission from their previous dean and the dean of the college to which they wish to transfer.

## Fees and Expenses

All West Virginia University fees are subject to change without notice. All fees are due and payable to the Controller on the days of registration. Medical Center students pay their fees at the Controller's Office, Basic Sciences Building. Students must pay fees before registration is accepted. Completion of arrangements with the Controller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair. Medical Center students pay at the Controller's Office, Basic Sciences Building. All students are expected to register on days set apart for registration at the beginning of each semester or summer session of the University.

No student will be permitted to register at the University after the twelfth day of a semester or the fourth calendar day of a summer session. Days are counted from the first day of registration.

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$10.00.

Students registering pay the fees shown in the fees chart, plus special fees and deposits as required.

No degree will be conferred upon any candidate and no transcripts will be issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

Persons not registered as University students and who are not members of the University's administrative or teaching staffs shall not be admitted to regular attendance in University classes.

**Classification of Students (Full-Time and Part-Time)**

A *full-time graduate student* is one who is registered for 9 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work altogether during the summer.

A *full-time undergraduate student* is one who is registered for 12 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during a 6-week summer session.

For fee assessment purposes, a *part-time graduate student* is one who is registered for fewer than 9 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

A *part-time undergraduate student* is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

It should be recognized that unique curriculum requirements in several of the Medical Center programs may require student involvement in summer clinical clerkships prior to official enrollment for the following semester's work.

**Summer Fees**

Tuition, per semester hour	Resident	Nonresident
Undergraduate students .....	\$14.00	\$59.00
Graduate students .....	20.00	81.00
Dentistry and Medicine students .....	27.00	93.00
Daily Athenaeum Fee* .....	.90	.90
Radio Station Fee* .....	.90	.90
Health, Counseling, and Program Services Fee .....	16.50	16.50
Mountainlair Construction Fee per 6-week summer session or any portion thereof* .....	11.20	11.20
Student Affairs Fee .....	6.00	6.00
Transportation Fee .....	9.50	9.50

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)

# ESTIMATED EXPENSES FOR MEDICAL CENTER PROGRAMS (First Semester) [Subject to Change]

Tuition and registration are the same for both semesters. Some expenses, such as fees, instruments, and book costs will be different for the Second Semester

School or Division	Tuition and Registration Fees				Instruments	Lab Coats, Uniforms, etc.	Books	Total	
	Resident	Nonresident	Fees*					Resident	Nonresident
<b>Dental Hygiene</b>									
Freshman	\$314.00	\$854.00	\$25.00		\$130.00	\$17.00	\$120.00	\$581.00	\$1,121.00
Sophomore	314.00	854.00	5.00		700.00	165.00	135.00	1,314.00	1,854.00
Junior	314.00	854.00	5.00		100.00	66.00	120.00	600.00	1,140.00
Senior	314.00	854.00	5.00		50.00	66.00	30.00	460.00	1,000.00
<b>Dentistry</b>									
First Year	391.00	984.00	38.00		2,200.00	88.00	300.00	2,979.00	3,572.00
Second Year	391.00	984.00	38.00		600.00	110.00	140.00	1,241.00	1,834.00
Third Year	391.00	984.00	14.00				75.00	466.00	1,059.00
Fourth Year	391.00	984.00	20.00					391.00	984.00
<b>Medical Technology</b>									
Junior	314.00	854.00	35.00			85.00	120.00	554.00	1,094.00
Summer	140.00	368.00				160.00	25.00	325.00	553.00
Senior	314.00	854.00				130.00	100.00	544.00	1,084.00
<b>Medicine</b>									
First Year	391.00	984.00	45.00		216.00	86.00	720.00	1,413.00	2,006.00
Second Year	391.00	984.00	55.00		648.00	86.00	576.00	1,701.00	2,294.00
Third Year	391.00	984.00				57.00	360.00	1,024.00	1,617.00
Fourth Year	391.00	984.00				57.00		608.00	1,401.00
<b>Nursing</b>									
Sophomore	314.00	854.00	5.00			116.00	160.00	590.00	1,130.00
Summer	132.00	474.00	5.00				50.00	187.00	529.00
Junior	314.00	854.00	5.00				90.00	404.00	944.00
Senior	314.00	854.00	5.00				90.00	404.00	944.00
<b>Pharmacy</b>									
Third Year	314.00	854.00			40.00		200.00	579.00	1,119.00
Fourth Year	314.00	854.00					40.00	379.00	919.00
Summer	314.00	854.00						314.00	854.00
Fifth Year	314.00	854.00					75.00	414.00	954.00
<b>Physical Therapy</b>									
Junior	314.00	854.00	5.00		30.00	60.00	375.00	779.00	1,319.00
Senior	314.00	854.00	5.00			60.00	250.00	624.00	1,164.00
Summer	42.00	177.00	10.00					42.00	177.00

\*Fees - includes lab fees, microscope rental, or graduation fee

TUITION & REGISTRATION FEES BREAKDOWN				Tuition	Registration	Higher Education Resources	Institutional Activity	Mountainair Construction	TOTAL
Dent. Hyg., Med. Tech.	Full-time 9 hr or more	RESIDENT		\$55.00	\$50.00	\$75.00	\$119.00	\$30.00	\$314.00
Nsg., Pharm., & Phys. Ther		NONRESIDENT		230.00	250.00	250.00	119.00	30.00	854.00
Graduate	Full-time 9 hr or more	RESIDENT		55.00	50.00	75.00	119.00	30.00	329.00
		NONRESIDENT		230.00	250.00	250.00	119.00	30.00	879.00
Dentistry & Medicine.....	Full-time 9 hr or more	RESIDENT		117.00	50.00	75.00	119.00	30.00	391.00
		NONRESIDENT		335.00	250.00	250.00	119.00	30.00	984.00
TUITION PER SEMESTER HOUR—PART-TIME & SUMMER (Under 9 hr.)				Nonresident					
Dental Hygiene, Medical Technology, Nursing, Pharmacy, & Physical Therapy				Resident		Nonresident			
				\$14.00		— Per Credit Hour— \$59.00			
				20.00		— Per Credit Hour— 81.00			
Graduate				27.00		— Per Credit Hour— 93.00			
Dentistry & Medicine.....				SUMMER \$13.00 under 6 hr.		— \$45.00 6 hr. and up each session			
SEMESTER \$35.00				SPECIAL FEES					

SEMIESTER, \$35.00 — SPECIAL FEES — SUMMER \$13.00 under 6 hr. — \$45.00 6 hr. and up each session



## Special Fees

Application for Admission (College of Law and Graduate School)	\$15.00
Certificate of Advanced Study in Education .....	2.00
Diploma Replacement .....	5.00
Examination for Advanced Standing .....	3.00
Examination for Entrance Credit, per unit .....	1.00
Examination of Candidate for Graduate Degree .....	1.00
(For graduate students not otherwise enrolled at time of final examination.)	
General Educational Development Tests (high school level) .....	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduation .....	10.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Graduate Program Continuance Fee .....	35.00
Late Registration (nonrefundable) .....	10.00
(Not charged to students who complete registration during the regular registration days as set forth in the University Calendar.)	
Reinstatement of Student Dropped from the Rolls .....	3.00
Student Identification Card Replacement .....	1.00
Student's Record Fee .....	2.00
(One transcript of a student's record is furnished by the Dean of Admissions and Records without charge. This fee is charged for furnishing an additional transcript.)	

## Fees for Off-Campus Courses

Fees for credit hours for off-campus students are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee, the Radio Station Fee, or the Mountainlair Construction Fee. However, all students must pay a \$20.00 course fee for each off-campus course taken.

## Laboratory Fees

Consult specific department sections of this *Catalog* concerning nonrefundable deposits and a microscope rental fee.

## Service Charge on Returned Checks

A service charge of 5 percent of the amount of each check returned unpaid by the bank upon which it is drawn shall be collected unless the student can obtain an admission of error from the bank.

If the check returned by the bank was in payment of University and registration fees, the Controller's Office shall declare the fees unpaid and registration cancelled if the check has not been redeemed within three days from date of written notice. In such a case the student may be reinstated upon redemption of the check, payment of the 5 percent service charge, the Reinstatement Fee of \$3.00, and the Late Payment Fee of \$10.00.

## Refund of Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Controller evidence of eligibility for a refund.

To withdraw officially, a student must apply to the Division of Student Affairs for permission. Semester fees will be returned in accordance with the following schedule:

First refund period ending on the twelfth day following the beginning of General Registration.	} All activity fees chargeable to Special Services and all other semester fees less \$2.50. (Under no circumstances is the amount retained less than \$2.50.)
Second refund period ending on the fifth Friday following the beginning of General Registration.	
Last refund period ending on the eighth Friday following the beginning of General Registration.	} 70% of all refundable fees.
	} 40% of all refundable fees.

The second Friday following the beginning of General Registration for a Summer Session is the end of the refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit, if the call comes before the end of the first three-fourths of the semester, and that the full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however, that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

## Identification Card

An identification card is issued to each full-time student upon paying full fees. It entitles the owner admission to certain University athletic events, various activities of student administration, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

## Residential Status for Admission and Fee Purposes

The West Virginia Board of Regents has adopted a policy regarding classification of students as residents or nonresidents for admission and fee purposes at all institutions under its jurisdiction.

1. *General.* Students enrolling in a West Virginia public institution of higher education shall be classified as resident or nonresident for admission, tuition, and fee purposes by the institutional officer designated by the President. (At West Virginia University, the Dean of Admissions and Records.) The decision shall be based upon information furnished by the student and all other relevant information. The Dean of Admissions and Records is authorized to require such written documents, affidavits, verifications, or other evidence as are deemed necessary to establish the

domicile of a student. The burden of establishing residency for admission, tuition, and fee purposes is upon the student.

If there is a question as to residence, the matter must be brought to the attention of the Dean of Admissions and Records at least two weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning residence shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

2. *Residence Determined by Domicile.* Domicile within the State means adoption of the State as the fixed permanent home and involves personal residence within the State with no intent on the part of the applicant or, in the case of the dependent student, the applicant's parent(s) to return to another state or country. Residing with relatives (other than parent(s)/legal guardian) does not, in and of itself, cause the student to attain residence in this State for admission or fee payment purposes. West Virginia domicile may be established upon the completion of at least twelve months of continued residence within the State prior to the date of registration, provided that such twelve months residency is not primarily for the purpose of attendance at any institution of higher education in West Virginia.

Establishment of West Virginia domicile with less than twelve months residence prior to the date of registration must be supported by evidence of positive and unequivocal action. Priority consideration should normally be given to such evidence as the purchase of a West Virginia home, full-time employment within the State, paying West Virginia property tax, filing West Virginia income tax returns, registering of motor vehicles in West Virginia, and marriage to a West Virginia resident. Items of lesser importance which might be considered as support factors include registering to vote in West Virginia and the actual exercise of such right, possessing a valid West Virginia driver's license, transferring or establishing local church membership, involvement in local community activities, and various other acts which may give evidence of intent to remain indefinitely within the State. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established. Factors militating against the establishment of West Virginia residency might include such considerations as the student not being self-supporting, being claimed as a dependent on federal or state income tax returns or the parents' health insurance policy if the parents reside out of state, receiving financial assistance from state student aid programs in other states, and leaving the State when school is not in session.

3. *Dependency Status.* A dependent student is one who is listed as a dependent on the federal or state income tax return of his/her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same residency as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the residence of the parent with whom he/she lives or to whom he/she has been assigned by court order. However, a dependent student who enrolls and is properly classified as a resident student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

A nonresident student who becomes independent while a student at an institution of higher education in West Virginia does not, by reason of such independence alone, attain residence in this State for admission or fee payment purposes.



4. *Change of Residence.* A student who has been classified as an out-of-state resident and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he/she has established domicile in West Virginia with the intention of making the permanent home in this State. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements but also by that person's actions. In making a determination regarding a request for change in residency status, the Dean of Admissions and Records shall consider those actions referenced in Section 2 above.

5. *Military.* An individual who is on full-time active military service in another state or a foreign country or an employee of the federal government shall be classified as a resident for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as residents of the State of West Virginia for tuition and fee purposes.

Persons assigned to full-time active military service in West Virginia and residing in the State shall be classified as in-state residents for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as residents of the State of West Virginia for tuition and fee purposes.

6. *Aliens.* An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 2 may be eligible for resident classification, provided that person is in the State for purposes other than to attempt to qualify for residency status as a student.

7. *Appeal Process.* The decisions of the Dean of Admissions and Records may be appealed to the President of West Virginia University. The President may establish such committees and procedures as are determined to be appropriate for the processing of appeals. The decision of the President of West Virginia University may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board.

## Regulations Affecting Degrees

Candidates for degrees are eligible for graduation when they complete the requirements in the college or school in which they are registered which were in effect at the time of their first registration in that college or school, provided they graduate within a period of seven years from the time of their first registration. Students who do not complete the requirements for graduation within seven years from their first registration must meet *all the conditions* of a later *Catalog* — one that will be no more than seven years old by the time they graduate.

If there are major changes in the *Undergraduate Catalog* during the student's course of study, the student does not have to abide by them unless they are promulgated by the Board of Regents, or by local, state, or federal law. However, by choice and with the approval of the adviser and the Dean, a student may meet *all the conditions* of a later *Undergraduate Catalog* than that under which the student first registered in that college or school.

University policy provides that in view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of WVU the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

All degrees are conferred by the Board of Regents upon recommendation of the faculties of the various colleges and schools. Degrees are granted at the close of the semester or summer session in which the students complete their work.

## **Baccalaureate Degrees**

### **Credits Required**

In addition to the University requirements listed in this *Catalog*, each baccalaureate degree is conditional upon the completion of a specified number of semester hours of credit, as determined by the student's degree program requirements. Therefore, students must familiarize themselves with their school and degree program requirements, as given in subsequent pages of this *Catalog*.

### **General Physical Education**

Two hours of general physical education, to be taken during the first year in residence, are required for graduation, except in the case of students entering with advanced standing amounting to 58 semester hours or more. (See "General Physical Education Program" in the School of Physical Education section of the *WVU Undergraduate Catalog*.) The University Health Service will determine whether students are physically qualified for required general physical education courses and for active participation in other University activities.

### **University Core Curriculum**

All WVU students must satisfy the requirements of the Core Curriculum in order to qualify for graduation. The separate schools and colleges determine the time at which students take core courses during their total program of study at the University.

The purpose of the Core Curriculum is to encourage the acquisition of a liberal education. A liberal education presupposes the capacity for synthesizing knowledge of the humanities, social sciences, natural sciences, and mathematics. Such a synthesis of both past and contemporary knowledge can make possible the intellectual flexibility needed to develop values, attitudes, tastes, and traits associated with the educated person in the modern world. Requirements include:

I. Two semesters of English Composition and Rhetoric (English 1 and 2) are required of all candidates for the bachelor's degree in all colleges and schools of the University, unless part or all of the requirement for certain students of superior achievement is waived under regulations prevailing at the time of admission. Such students will be informed of their eligibility by the Coordinator of Writing Programs in English.

II. Remedial work in mathematics to cover the deficiency if the student, upon entering the University, lacks proficiency in mathematics equal to that normally attained in two years of high school mathematics.

III. Twelve credit hours\* of work in selected approved courses in each of the three following areas, including courses in at least two subjects in each group:

*Group A*

1. Art
2. English  
(exclusive of Engl. 1 and 2)
3. Humanities
4. Languages
5. Music
6. Philosophy
7. Religious Studies
8. Selected Multidisciplinary  
Studies
9. Speech Communication
10. Theatre

*Group B*

1. Economics
2. Education Foundations 1
3. Forestry 140
4. Geography
5. History
6. Mineral and Energy Resources 97
7. Political Science
8. Psychology
9. Selected Multidisciplinary  
Studies
10. Social Science
11. Sociology and Anthropology

*Group C*

- |                     |   |
|---------------------|---|
| 1. Bacteriology     | 9. Mathematics                            |
| 2. Biology          | 10. Nutrition                             |
| 3. Chemistry        | 11. Physical Science                      |
| 4. Computer Science | 12. Physics and Astronomy                 |
| 5. Entomology       | 13. Physiology                            |
| 6. Engineering 111  | 14. Selected Multidisciplinary<br>Studies |
| 7. Genetics         | 15. Statistics                            |
| 8. Geology          |   |

\*Two 4-credit courses and one 3-credit course may be substituted in lieu of 12 credit hours.

The determination as to whether ROTC courses will be counted toward fulfillment of the Core Curriculum or will be counted as free electives is the prerogative of the department chairperson or dean of the appropriate college or school.

## **Branch, Community, and Junior Colleges**

Seventy-two hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges may not exceed 72 hours. Transfer credit from community colleges and junior colleges is normally limited to lower-division courses.

## **Requirements As to Residence**

A student who comes to WVU from another college or university should transfer not later than the beginning of the third year. In no case will a student who matriculates in WVU later than October 1 in any year be permitted to receive a degree at the next commencement.

In special cases, students who desire to leave WVU at the close of their third year to enter another institution for the purpose of taking a combined course leading to two degrees or of preparing for graduate study, upon application beforehand to the Committee on Academic Standards of the college or school in which they are registered, may be permitted to do the work



of the fourth year, or a part thereof, at such other institution and to receive the bachelor's degree from WVU upon presentation of the proper credits.

The transfer student whose undergraduate work has been altogether in institutions within the West Virginia state system of higher education must complete either the last 30 hours of work, or a minimum of 36 hours including 16 of the last 32 hours in residence. Other transfer students must complete either a total of at least 90 hours or the last 30 hours in residence at WVU. The transfer student may be required to earn up to 15 hours in the major field in residence regardless of the number of hours and the nature of the courses transferred.

### **Work Done Out of Residence**

It is WVU policy to discourage the taking of regular residence courses in absentia. In the case of courses begun at WVU and not completed because of illness or for other acceptable reasons, however, permission to complete the work in absentia under the direction of regular WVU instructors may be granted by the Committee on Academic Standards of the college or school concerned; but in such case credit should be given only upon a report of a grade of no less than C on final examination. This regulation does not apply to WVU off-campus courses.

After a student enrolls on the Morgantown campus, the student must obtain advance approval in writing from the student's adviser and dean and the Dean of Admissions and Records to obtain credit toward a degree for courses offered at other institutions and undergraduate branches of WVU. An overall average of C is required on all work completed at WVU in order to obtain such approval. Transfer credit from schools not affiliated with WVU will be accepted for courses carrying a grade of C or higher when conditions indicated above have been met.

### **Substitution for Required Courses**

A student who desires to substitute another course for any prescribed in the student's curriculum or required for the degree toward which the student is working must obtain permission for such substitution from the Committee on Academic Standards in the student's college or school.

### **Advanced Placement Credit**

West Virginia University encourages students to work to their full capacity and to advance as rapidly as appropriate in their academic work. A number of opportunities are open to both qualified high school juniors and seniors, as well as to adults returning to school after an interval of work or military experience, to demonstrate competence beyond that normally associated with graduation from high school.

High school students who take college-level subjects offered in their schools in cooperation with the College Entrance Examination Board (CEEB) Advanced Placement Program should take the appropriate three-hour examinations administered by the Advanced Placement Service and have the scores sent to WVU. Credit for corresponding WVU courses will be given for high achievement on these tests.

Applicants for admission to the University, especially those who have gained a significant level of maturity through their life experiences, may gain college credit for their educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. Policy of the West Virginia

Board of Regents allows University credit to be awarded for successful completion of any or all of the CLEP Subject Examinations, as well as allowing up to 34 hours of general education credit for successful performance on the CLEP General Examinations. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek advanced standing via the CLEP program. Interested applicants may write the Dean of Admissions and Records for further information regarding the CLEP program and WVU credit.

Advanced placement also may be granted for specific military experience. Returning veterans should consult the Dean of Admissions and Records for details.

After admission to WVU, students may elect to take examinations demonstrating their competence in particular course work. Credit or advanced placement is given for satisfactory completion of the tests. Students interested in challenging courses by examination should consult their advisers for procedures and details.

### **Credit by Examination**

Students actively enrolled in WVU may receive credit for courses demonstrating competency in the content covered by a particular course. The department responsible for administering the course will determine the evaluation tools. Where skill and cognitive abilities are components of the course, both will be evaluated. Credit will be given if a satisfactory degree of competency is demonstrated.

A college, school, or department may require students desiring such credit to prepare a self-evaluation statement determining the degree of competency they possess and the methods by which it was achieved.

Students interested in receiving credit for a course by examination should consult the college or school in which the course is offered for procedures and details.

### **Credit for Correspondence Work**

Credit up to a maximum of 30 semester hours for work completed by correspondence in nonlaboratory courses will be accepted by WVU when such work is given by accredited colleges or universities that accept work for credit toward their own degrees and whose residence work is accepted by WVU.

### **Second Bachelor's Degree**

A student who has received one baccalaureate degree and wishes to receive a second baccalaureate degree must satisfactorily complete enough additional credits earned at WVU and elsewhere, is at least 30 semester hours more than the number required for the first baccalaureate degree; all requirements, departmental and otherwise, of the second baccalaureate degree program must be satisfied. In no case will a second baccalaureate degree be awarded to a student who has not met the University residence requirement (see "Requirements As to Residence").

A student who wishes to receive simultaneously two baccalaureate degrees must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. Students desiring to receive simultaneous baccalaureate degrees must be

admitted to both programs and provide the Office of Admissions and Records of the college or school approvals in writing.

(Effective Date: Students graduating after August 31, 1979.)

## **Visitors**

Full-time University students may attend classes as visitors, provided they obtain the written permission of their advisers and of the instructors in classes they desire to visit. Members of the administrative or teaching staffs, or other regular employees of the University, may attend classes as visitors provided they obtain written permission of the chairpersons of their departments and of the instructors in the classes which they desire to visit.

No credit is given for work in such classes. Such persons may not obtain credit by advanced standing examinations in courses attended as visitors.

## **Auditors**

Students may enroll in courses without working for grade or for credit by registering as auditors and by paying full fees. Change in status from audit to credit or from credit to audit may be made during the registration period. Attendance requirements for auditors shall be determined by the instructor of the course being audited. It is the prerogative of the instructor to strike the name of any auditor from grade report forms and to instruct the Office of Admissions and Records to withdraw the auditor from the class, if attendance requirements are not met.

## **Summer Sessions**

There are two summer sessions, each of six weeks duration. The first session begins approximately the middle of May and ends June 30. The second session begins July 1, and ends the second week of August. Requirements for admission and character of the work offered are the same for the summer sessions as for the regular academic year.

Credit may be obtained toward the bachelor's, master's, and doctorate. Offerings are varied from summer to summer so that students may complete work for the master's degree by attending summer sessions only.

For complete information, see the *WVU Summer Sessions Bulletin*.

## **Grade-Point Average**

All academic units of the University require minimum standards of scholastic quality. Grade points are computed only on grades earned at WVU and at other institutions in the West Virginia state system of higher education. To be eligible for graduation, a student must have a grade-point average of 2.0 (C) or higher on all work for which the student receives grades (except W, WU, and P). In addition, specific degree programs may require minimum grades of C, or in some cases higher than C, in specific courses or portions of the baccalaureate program.

It is the student's responsibility to keep informed of the student's grade-point standing. This information may be obtained at any time from the dean of the college or school in which the student is registered.

Seventy-two hours of credit and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate



degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges is normally limited to lower-division courses.

## **Graduation with Honors**

The University recognizes distinguished academic achievement by awarding initial baccalaureate degrees *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude*, to qualified students. The following regulations govern these awards:

1. Grade-point averages for graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be computed by starting with the student's penultimate semester or summer session and continuing in reverse chronological order until at least 80 semester hours, excluding credits earned with a grade of P or S, have been counted. If, in order to total the required number of hours it is necessary to include any part of a semester or summer session, the work of the whole semester or session shall be included.

2. Students who transfer to WVU may be eligible for graduation with honors based on the computational system stated above.

3. Subject to the above conditions, all candidates for a baccalaureate degree whose grade-point average is 3.80, or higher, shall be graduated *Summa Cum Laude*. Those whose average is lower than 3.80, but equal to or higher than 3.60, shall be graduated *Magna Cum Laude*. Those whose average is lower than 3.60, but equal to or higher than 3.40, shall be graduated *Cum Laude*.

4. Fitting recognition of graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be made on the candidate's diploma and in the Commencement Program.

*(This policy became effective for all students whose first enrollment in an institution of higher education was on or after May 15, 1979.)*

## **Examinations and Reports**

### **Courses**

As a rule courses extend through one semester only, although some are of a year's duration. No credit will be given for less than an entire course except by special order of the Committee on Academic Standards. Grades given at the end of the first semester in courses extending throughout the year are merely indicative of the quality of work done by the student to that point and do not give credit for the part of the course so far completed. Such first-semester grades may be considered in determining the final grade, however.

Summer sessions courses carry the same credit value as courses offered in regular semesters.

### **Evaluation of Student Progress**

Measurement and evaluation of learning, consistent with the objectives of the course, provide opportunity for the student and the teacher to evaluate progress through a variety of methods. Evaluation by final examination alone is discouraged.

Students are responsible for all materials presented or assigned in scheduled instructional sections. Failure to complete all assigned work may result in a report of I or a grade of F at the discretion of the instructor.

Final examinations are held during the last two days of each semester of the academic year and during the last two days of each summer session. A listing in the *Schedule of Courses* each semester sets the time for final examinations.

The only tests permitted during the week of classes preceding finals will be in evening classes, practical laboratory tests, make-up examinations, and regularly scheduled short quizzes.

### **Absence from Examinations**

The student is required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor shall count the examination as zero and report the final grade as F. If, in the opinion of the instructor, absence of the student was for satisfactory reason, the grade of I may be reported.

A student who has been absent because of illness, authorized University activities, or other reasons approved by the student's dean, has the opportunity to make up regularly scheduled examinations.

### **Grade Reports**

In the seventh week of classes of each semester, instructors in all undergraduate courses shall submit a report of students doing unsatisfactory work; that is, earning grades of D or F. These grades are used for counseling and are not recorded on the student's permanent record in the Office of Admissions and Records. These reports are sent to the Dean of Admission and Records or a representative and this information is transmitted to the student, parent or guardian, adviser, and dean of the college or school.

Final grades are reported by instructors directly to the Office of Admissions and Records within 48 hours after the closing of the examination. The rule also applies to the final grades of all students registered in other colleges and schools of WVU who are enrolled in law courses

The final standing of all seniors provisionally approved for graduation at the close of the second semester shall be reported by their instructors to the deans of their colleges and schools, and the final standing of all graduate students provisionally approved for graduation shall be reported to the Dean of the Graduate School. Special report cards are supplied by the Dean of Admissions and Records.

A report of each student's work is made at the close of the semester or summer session to the student or to the student's parents or guardian.

## **Grading, Absences, Academic Standing, Probation, Suspension, Reentry, Withdrawals**

### **Grading System**

- A — excellent (given only to students of superior ability and attainment)
- B — good (given only to students who are well above average, but not in the highest group)
- C — fair (average students)
- D — poor but passing
- F — failure

- I — incomplete
- W — withdrawal before the end of the fifth week of a semester or withdrawal doing satisfactory work thereafter
- WU — withdrawal doing unsatisfactory work (after the fifth week of a semester)
- P — pass (see Pass-Fail Grading below)
- X — auditor, no grade and no credit
- CR — credit but no grade
- PR — progress. Final grade at end of the second semester (Medical Center)
- S — Satisfactory
- U — Unsatisfactory (equivalent to F)  
[in certain approved graduate courses]

### Pass-Fail Grading

The basic purpose of pass-fail grading for undergraduates at WVU is to promote the undertaking of elective courses unrelated to the student's fields of degree concentration. A secondary purpose of pass-fail grading is to facilitate student grading in performance or competency based courses which may be an integral part of the student's program.

*Student Option.* Any full-time student who has completed 15 hours and maintains a 2.0 grade-point average may elect to take a maximum of 4 hours each semester or each summer session in which the grade earned will be either P (pass) or F (fail). The courses taken for pass-fail grading must be free electives and shall not exceed a total of 18 hours of credit. Unless otherwise indicated, excluded are courses in the student's major, courses in other subjects that are required by the major, and courses taken to satisfy either University, college, or school requirements. For example, courses elected to satisfy the General Physical Education, English, Core, or Foreign Language requirements may not be taken for pass-fail grading.

The student electing the pass-fail grading option will be graded as a regular student and the appropriate letter grade submitted to the Office of Admissions and Records. The Office of Admissions and Records shall convert the earned letter grade to P-F on the basis of A, B, C, or D for a pass, and F for a fail.

The selection of a course for pass-fail grading must be made at registration and may not be changed after the close of the registration period.

*College or School Option.* A department or unit may designate any performance or competency based course which, with approval of the college or school and the University Senate, may be offered exclusively as P-F. Such courses offered only as P-F shall not be included in the maximum of 18 hours that may be freely elected under the student option.

*(This revised policy became effective as of the beginning of the First Semester, 1977-78, for grading under the Student Option.)*

### Grade Points

Grade points are based on the following grade-point values for each semester of credit:

A	B	C	D	F	I	U
4	3	2	1	0	0	0



The grade-point average is computed on all work for which the student has registered with the following exceptions:

(a) Courses with W, WU, P, S, and X.

(b) If an undergraduate student earns a grade of D or F in any course at WVU taken no later than the semester or summer session registration when a cumulative total of 58 hours has been attempted, and if this course is repeated in residence at WVU, one time only, the lower grade shall be disregarded for the purpose of determining the student's grade-point average, hours passed and hours attempted, and the higher grade earned for this course shall be used in determining the student's grade-point average, hours passed and hours attempted. The first grade recorded shall not be deleted from the student's record and the second grade will be entered marked repeat, in the semester when taken. The repeat shall be completed no later than the semester when taken. The repeat shall be completed no later than the semester or summer session registration when a cumulative total of 70 hours has been attempted. (Effective Date: For students enrolled for the first time at West Virginia University for a session after May 15, 1979.) Provided, however, that when a student receives a grade of I and later removes the incomplete grade, the average grade-point standing shall be calculated on the basis of the new grade.

If the final grade of a student in any course is F, the student must take the course again in residence at WVU if the student desires to receive credit for it, unless the dean of the college or school authorizes the exception. The grade of I is given when an instructor believes that the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within the following semester or the next semester in which the student is in residence, and becomes a failure unless special permission is granted by the appropriate Committee on Academic Standards to postpone removal.

For teacher certification the student is responsible for every registration in a course for which a grade of A, B, C, D, F, WU, P, or I is received.

## **Absences**

Students who are absent from class for any reason are responsible for work missed.

Students should understand that absences may jeopardize their grades or continuance in the course.

Instructors who use absence records in the determination of grades must announce this fact to students (in writing) within the first five class meetings.

It is the responsibility of the instructor to keep an accurate record of all students enrolled.

Instructors may report excessive absences to the student's dean or adviser.

Students who have been absent because of illness, authorized University activities, or other reasons approved by their deans, have the opportunity to make up regularly scheduled examinations.

## **Probation, Suspension, Reentry Policy**

### **Uniform Probation**

Any undergraduate student whose cumulative average is 2.0 or higher is in good academic standing in the University. Every baccalaureate degree requires a minimum grade-point average of 2.0 for graduation. (Nothing in

this statement prevents a unit from requiring a minimum grade-point average above 2.0, or other academic requirements.)

Students whose cumulative grade-point average is below 2.0 will be notified on semester grade reports that their academic performance is unsatisfactory. Such students may be subject to probation by the dean of their college or school. Students are not on probation until notified, in writing, by their dean, who will establish the terms of their probation.

### **Uniform Academic Suspension Regulations**

The student whose cumulative grade-point deficiency exceeds the "allowable grade-point deficiency" (see Table) is subject to suspension. Normally, students will be suspended only at the end of the academic year; students exceeding the maximum allowable grade-point deficiency at other times may be put on probation or otherwise warned. However, nothing in this provision shall prevent a dean from suspending a student at any other time of the year if the student's grade-point deficiency exceeds the allowable maximum.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Action on academic suspension is to be taken by the appropriate dean at the end of each semester and such action is to be based on a special report from the Dean of Admissions and Records. The sequence of events in bringing about this action is:

1. The Dean of Admissions and Records will forward a special report at grade-reporting time to the college or school deans for appropriate action.
2. The Dean of Admissions and Records will provide the Vice-President for Academic Affairs with a list of students subject to suspension in each college or school.
3. Deans will report to the Vice-President for Academic Affairs the action taken on the students reported to them for academic suspension by the Dean of Admissions and Records.

Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester, but will not exceed one calendar year from the date of suspension.

Students who have been suspended may petition the Committee on Academic Standards of the college or school to which they wish to be readmitted in care of the dean. The normal periods for consideration of petitions are October 1-November 15 and March 1-April 15 of each academic year.

A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU upon readmission to the University. After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met.

**MAXIMUM ALLOWABLE GRADE-POINT DEFICIENCY\***

<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>	<i>Total Hours Attempted**</i>	<i>Maximum Grade-Point Deficiency**</i>
0-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	7
50-54	13		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia System of Higher Education excluding grades of P, exclusive of the D-F Repeat Policy.

**Readmission After Suspension**

During the semester immediately following the effective date of suspension, suspended students may petition in writing for readmission. The college or school petitioned shall establish the terms of readmission for successful student petitioners.

After one calendar year from the effective date of suspension any student who has been once suspended shall, upon written application, be readmitted to the University, with the terms of readmission to be established by the college or school entered by the readmitted student.

A suspended student who is readmitted under the provisions above will be placed on academic probation and will be subject to the maximum grade-point deficiency regulations as before, unless the terms of probation agreed to by the student require otherwise. Each college or school will have the right to establish minimum levels of performance expectations.

(Effective: August 15, 1980, for all students.)

**Withdrawals****Withdrawal from Class**

*Deadlines:* Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a three-week summer session), students may withdraw from individual courses. Deadlines will be published in the *University Schedule of Courses* each semester.

*Procedures:*

1. Before withdrawing from individual classes, students are responsible for consulting their advisers to determine:
  - (a) Whether their course loads would be reduced below the minimum requirements set by their colleges or schools (if so, permission of the Committee on Academic Standards of the respective college or school is required *before* the course adjustment form may be submitted); or



- (b) Whether their course loads would be reduced below the minimum number of hours required to qualify for special status, e.g., financial aid, varsity athletic competition, or international full-time student status; or
  - (c) Whether the courses to be dropped are required to fulfill academic probationary conditions; *and/or*
  - (d) Whether the courses from which they desire to withdraw might be
    - (1) Corequisite with other courses they are taking; or
    - (2) Prerequisite to other courses required for the next term.
2. Students must obtain adviser signatures on the University course adjustment forms and then submit the forms to the Office of Admissions and Records.
  3. Students who withdraw from courses following all the established University procedures before the published deadline will receive a W on the transcript for the appropriate courses. Grade-point averages are not affected in any way by this mark.

## **Withdrawal from the University**

*Deadlines:* Students may withdraw from the University *any time before the last day* on which regular classes are scheduled to meet. Students who withdraw from the University before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) will receive grades of W in all their courses for that semester or session. Students who withdraw after these deadlines will receive grades of W in those courses in which satisfactory progress had been made; they will receive grades of WU for courses in which progress had been unsatisfactory.

### *Procedures:*

1. Students who decide to leave WVU should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all *financial obligations* and for following established procedures, including the completion of forms and the delivery of the completed forms to appropriate officials. The withdrawal becomes official only after the forms have been recorded by the Dean of Admissions and Records.
2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons, still must send to the Division of Student Affairs notification of their intention to withdraw. The notice should be verified in writing.
3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Student Affairs office (or dean's office of an off-campus instructional unit). Withdrawal procedure will be explained at that time.
4. With the help of their academic advisers, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

## **Re-Enrollment After Withdrawal**

An undergraduate student who withdraws from WVU in two consecutive semesters (excluding summer sessions) may not register for further work

without approval of the dean of the college or school in which the student wishes to register and subject to conditions set by that dean.

## **Advisers, Committee on Academic Standards**

### **Advisers**

Each student entering WVU is assigned an adviser whose duty is to assist students in preparing schedules, assign them to classes, and certify their study lists to the Dean of Admissions and Records. The adviser is expected to give such advice and sympathetic guidance as the students may need in their work at the University. Students are expected to go freely to their advisers to discuss problems.

Advisers, upon receipt of reports of excessive numbers of absences, shall have conferences with the student concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, the case shall be reported to the dean of the college or school.

### **Committee on Academic Standards**

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

## **Cheating**

The academic development of students and the overall integrity of the institution are primary responsibilities of West Virginia University. Cheating is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

### **Responsibilities**

Students should act to prevent opportunities for cheating to occur, and in such a manner to discourage any type of cheating.

Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-

offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and security officers, shall promptly report each known case of cheating to the appropriate supervisor, department chairperson, or dean of the college or school concerned.

### **Cheating Defined**

Cheating is defined to include any of the following:

1. Obtaining help from another student during examinations.
2. Knowingly giving help to another student during examinations.
3. The use of notes, books, or any other source of information during examinations, unless authorized by the examiner.
4. Obtaining without authorization an examination or any part thereof.
5. Plagiarism: submitting for credit, without appropriate acknowledgment, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been knowingly obtained or copied in whole or in part from another individual's academic composition, compilation, or other product, or commercially-prepared paper.
6. Altering, or causing to be altered, the record of any grade in a grade book, office, or other record.
7. Taking an examination or doing academic work for another student, or providing your own work for another student to copy and submit as his/her own.
8. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.

### **Procedure for Handling Cheating Cases**

*Step 1.* At the discretion of the student, faculty member, and chairperson of the department, some cases involving cheating where there is an admission, in writing, of guilt by the student may be satisfactorily resolved at the departmental level. The maximum penalty at Step 1 is an F in the course. Whenever a penalty is administered, the facts of the case shall be reported in writing to the dean of the college or school, and a copy forwarded to the Vice-President for Student Affairs for the Vice-President's permanent records. In cases wherein cheating occurs in a college or school other than that in which the student is a degree candidate, the results of the case shall be reported to the dean of the college or school in which the student involved is enrolled.

*Step 2.* When the student denies guilt, or the faculty member or department chairperson feels the penalties available at Step 1 are insufficient for specific act, the dean of the college or school in which the course is offered shall be notified in writing of the specifics of the case. The dean shall then implement the following steps:

- a. Formal notification to the student of the charges and the nature of the evidence, which if proved would justify action.
- b. Opportunity for the student and witnesses to respond in writing, rebutting the charges.
- c. Opportunity for the student to request that the case be forwarded by the dean to the West Virginia University Student Discipline Committee (Step 3).



d. If the student admits guilt in a signed statement to the dean, or is found guilty, the dean shall prescribe the penalty deemed appropriate. Allowable penalties for Step 2 include F in the course, written reprimand, and probation. The dean shall promptly report thereon in writing to the President of the University and shall at the same time place a copy of such report in the permanent record of the student concerned and forward another copy to the Vice-President for Student Affairs for his records. A copy of such report will also be forwarded to the dean of the college or school in which the student is enrolled. The purpose of this copy of the report is to provide information in the event that further discipline or penalty may be deemed warranted by the dean of the college or school in which the student is a degree candidate. These records will be maintained by the deans until the student graduates, at which time the records will be destroyed.

e. The dean shall have the prerogative to refer any first-offense cheating case to the WVU Student Discipline Committee. If the cheating allegation is a second offense, it shall be referred automatically to the WVU Student Discipline Committee (Step 3) for action under its guidelines.

Step 3. The WVU Student Discipline Committee shall handle cases on cheating referred by a dean or requested by a student. The case must be heard using the Committee on Student Discipline guidelines. If the committee finds the student guilty of cheating, it will recommend the penalty it deems appropriate under the circumstances to the President of the University and to the appropriate deans. Allowable sanctions in these cases include, but are not limited to, probation, suspension, or expulsion.

### **Appeal**

The student may appeal to the President of the University any and all decisions of a dean, department chairperson, or Student Discipline Committee, in accordance with standard operating procedures as spelled out in the President's statement on due process of January 29, 1971. Appeals in regard to decisions made by the University's President may be taken to the Board of Regents.

### **Criminal Act in Connection with Cheating**

If a student admits in writing that he/she has been guilty of cheating, or is found guilty of cheating by the Student Discipline Committee, in a case involving what is believed to be a criminal offense—such as theft of an examination or test materials, alteration of records, forgery, breaking or entering buildings, offices, desks, safes, or filing cabinets, damage to property, and other similar misconduct—the academic penalties and discipline as herein prescribed shall be applied. In addition, the facts of the case will be presented to the appropriate prosecuting attorney for further investigation and for such criminal or other action as may be warranted.

# Medical Center Basic Sciences— Programs and Courses of Instruction

The Department of Anatomy, Biochemistry, Microbiology, Pharmacology and Toxicology, and Physiology offer individual graduate programs leading to the M.S. and Ph.D. degrees and provide courses for students of medicine, dentistry, pharmacy, nursing, and other allied health professions.

(Detailed information concerning Graduate School academic information is presented in the *WVU Graduate School Catalog*.)

## **Anatomy**

The Department of Anatomy offers graduate programs which are committed to the training of competent researchers and capable teachers. This is accomplished by the completion of a carefully designed plan of study tailored to the individual student's interests. The program begins with instruction in basic morphological, developmental, and functional aspects of human anatomy. Additional related course work and electives are required. These selected courses strengthen the area of interest of the student. The student then conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.).

## **Admission Requirements**

In addition to the admission procedure of the Graduate School, the Department of Anatomy requests that each applicant complete a departmental application form, obtained from the department. After an application is favorably reviewed by the departmental Graduate Committee, applicants are invited for a personal interview whenever practical. The applicant is admitted by a majority vote of the departmental faculty.

It is recommended that the following courses be completed before entering the graduate program: algebra, trigonometry, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology, and two years of French, German, or Russian. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants who desire consideration for financial aid should complete the application process before January 15.

## **Doctor of Philosophy**

The first year of study is usually occupied with required course work within the Department of Anatomy. These courses include gross anatomy, microanatomy, neurobiology, introduction to research, and seminar in anatomy. Required courses in other basic medical sciences, such as biochemistry and physiology, are usually taken in the second year. Twelve hours of additional graduate-level courses are also required. These

requirements will have been satisfied when the student earns a grade of at least B in each of the courses taken in the Department of Anatomy and has maintained a 2.75 overall grade-point average as required by the Graduate School.

To be admitted to candidacy for the Ph.D. degree the student must satisfy the above requirements, pass a written and oral comprehensive preliminary examination, and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree each student must complete a dissertation based on original research and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an Advisory Committee, which is composed of faculty members selected by the student.

The student often culminates the training period with presentations at regional and/or national scientific meetings. The Southern Society of Anatomists and the American Association of Anatomists are the most suitable meetings for this purpose.

## **Master of Science**

The master's program in Anatomy is offered as a terminal degree only for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D.

An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy plus 6 to 9 hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work the student must complete a thesis based on original research and defend the thesis at an oral examination.

## **Research and Instruction**

*Research Areas*—Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues, and organs, under normal and experimental conditions with *in vivo* microscopic, histochemical, electron microscopic, autoradiographic, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration and the effects of drugs and other environmental agents on development. Neuroanatomy: Experimental, comparative, and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

## **Anatomy (Anat.)**

101. *Principles of Human Anatomy.* (For paramedical students only.) I. 3-4 hr. PR: Biol. 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.
102. *Gross Anatomy.* (For physical therapy students.) II. 3 hr. PR: Anat. 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck.



103. *Microanatomy*. (For physical therapy students.) I. 2 hr. PR: Consent of instructor or chairperson. Introductory cell and tissue structure.
109. *Oral Histology*. (For dental hygiene students.) II. 3 hr. PR: Consent of instructor or chairperson. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.
152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent of instructor or chairperson. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture. (Same as *Sociology and Anthropology* 152.)
301. *Gross Anatomy of the Trunk*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum.
302. *Gross Anatomy of the Head and Neck*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 3 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the head and neck.
304. *Gross Anatomy of the Extremities*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the upper and lower extremities.
305. *Microanatomy*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 4 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the back, upper extremities, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy*. (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system. (See also CC MD 375, Neurobiology.)
309. *Microanatomy and Organology*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 4 hr. PR: Dental student standing or consent of chairperson. Cells, tissues, and organs.
312. *Special Topics in Anatomy*. I, II. 2-4 hr. per sem. PR: Anat. 301 or 306; and Anat. 305 or 309; consent of chairperson. Different topics of current interest in anatomy that are not included in the regular graduate courses.
314. *Applied Anatomy*. I, II. 2-6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.
315. *Craniofacial Osteology and Myology*. I. 3 hr. PR: Dental, medical or graduate student standing or consent of instructor. Study of craniofacial embryology, morphology and physiology with special emphasis on articulations and their clinical applications.
316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: Anat. 315 or consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

318. *Oral Histology and Embryology*. (For dental and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.
375. *Neurobiology*. (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
401. *Advanced Gross Anatomy*. I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 306, 307 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.
402. *Advanced Developmental Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301, 302, 304, and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar*. I, II. 1-6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.
405. *Experimental Embryology*. II. (Alternate Years.) 3 hr. PR: Embryology and cellular physiology or biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. (Course may be repeated.) PR: CC MD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. (Alternate Years.) 3 hr. PR: Anat. 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent of instructor or chairperson. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
491. *Advanced Anatomy*. I, II. 2-8 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Committee.)

## Biochemistry

Graduate programs in the Department of Biochemistry are designed to assist students in the development of their own capabilities for independent thought and research. All students are provided with a strong biochemistry background; however, the program has sufficient flexibility to allow individual students to select advanced specialty courses in biochemistry which are of particular importance to their career goals. Faculty research problems are of current interest and are diverse, reflecting the broad spectrum of areas encompassing biochemistry. Specific major areas of research in the Department of Biochemistry include: elucidation of specific mechanisms of enzyme catalysis; protein conformation changes induced by metals; cytochrome P-450 oxidative processes; characterization of immune complement interaction with red cell membranes; investigations into microbial infection processes; membrane alteration during differentiation in the cellular slime mold; hormonal regulation of animal cell metabolism; control of secretory processes; tRNA synthesis and maturation; regulation of mammalian cell growth; control of eukaryotic DNA syntheses; carcinogenesis; energy-coupled ATP synthesis/hydrolysis.

## **Admission Requirements**

A prospective graduate student should hold a bachelor's degree with a science major and should have successfully completed the following courses in qualitative-quantitative chemical analysis, organic chemistry, calculus, physics, and physical chemistry. In some cases, a deficiency in the above may be made up after admission to the program.

Application is made by submission of the following items to the Department of Biochemistry: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's present abilities and potential; (c) official transcript of the applicant's college grades; and (d) official copy of Graduate Record Examination (GRE) scores. Owing to the sequence of courses, entrance in the fall is preferred, but exceptions may be made as necessary. Application material and program details may be obtained by writing: The Graduate Coordinator, Department of Biochemistry, School of Medicine, West Virginia University, Morgantown, WV 26506. The deadline for receipt of applications and supporting documents by the department is June 1; to be considered for financial support, applications should be submitted much earlier, preferably by February 1.

## **Doctor of Philosophy**

To insure that all students become familiar with the basic principles of biochemistry, the first year of the Ph.D. program is primarily devoted to course work. In addition to formal courses during the first semester, students participate in a laboratory program which involves all faculty members. This laboratory experience is designed to illustrate the basic research skills involved in biochemistry. During the second semester, students will undertake research in at least two laboratories of their choice. During the first two years, the students also are given monthly cumulative examinations, designed to assure the faculty that the students are developing a working knowledge of the field of biochemistry appropriate to a doctoral candidate. Students are required to pass nine cumulative examination questions during this period to fulfill the written examination requirement for the Ph.D.

Upon successful completion of the first year, students will choose a dissertation research adviser, at which time emphasis will be placed on research under the direction of the research adviser. During the second year, specialized courses in biochemistry will be offered as the students continue their research programs. During subsequent years, the students emphasize independent thesis research, and a few formal courses are taken.

An essential component of the Ph.D. program is participation in departmental journal clubs and seminars. Both students and faculty participate, thus students learn to effectively organize and present research material to a large group of people.

Completion of the Ph.D. program is realized when the student successfully presents the results of his/her research to both the Department of Biochemistry and a graduate advisory committee. Typically, four years are required to realize this goal.

## **Master of Science**

The Department of Biochemistry offers the thesis master's degree. This program involves completion of a master's research project in addition to formal course work. The program for this degree is essentially identical to



that for the Ph.D. program; however, only six cumulative examination questions must be passed, and thesis-level research completed.

## Research and Instruction

*Research Areas*—Hormonal regulation of hepatic carbohydrate metabolism. Enzyme kinetics. Lipid metabolism and biogenesis of membranes. Structure and transfer RNA; RNA synthesis in mammalian cells. Atherosclerosis. Physical chemistry of proteins. tRNA methyltransferases in normal and tumor systems. Influence of nutrition on tissue protein and amino acid metabolism. Chemistry of host-parasite relationship. Interaction of macromolecules in biological systems. Physical biochemistry. Nutritional oncology. Immunochemistry. Mechanisms of enzyme action. Energy-coupled ATP synthesis/hydrolysis. Role of hormones on secretory mechanisms.

## Biochemistry (Bioch.)

- 139. *Introduction to Biochemistry*. I. 4-5 hr. PR: Inorganic chemistry. (For medical technology and pharmacy students; others by consent.) Lecture and conference, 4 hr.; Laboratory, 1 hr.
- 192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a maximum of 12 hr.) PR: Consent.
- 231. *General Biochemistry*. I. 7 hr. PR: Inorganic chemistry, organic chemistry. (For medical students and regular full-time graduate students in basic sciences departments.) Consists of main lectures (all); conferences (medical students); and lecture/problem sessions (graduate students).
- 239. *Clinical Chemical Techniques*. II. 4 hr. PR: Bioch. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)
- 305. *General Biochemistry*. II. 4 hr. PR: General chemistry, organic chemistry, and consent. (Dental and graduate students.) Lecture, conference, and demonstration.
- 310 / 312. *General Biochemistry*. (Offered in conjunction with the Department of Agricultural Biochemistry.) I, II. 6 hr. PR: General chemistry, organic chemistry. (For graduate students in basic science programs.)
- 399. *Special Topics*. I, II. 1-2 hr. PR: Consent.
- 423. *Immunochemistry*. II. 2 hr. PR: Consent. Chemistry and biochemistry of antibodies, antigens, and complement.
- 491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Physical techniques in biochemistry; nucleic acids and protein biosynthesis; enzymology and protein chemistry; metabolic regulation (each topic—one semester, in sequence shown). Designed primarily to provide a background for students who will do research in biochemistry and molecular biology. Emphasis will be on basic principles, concepts and modern techniques useful for the solution of important biological research problems.
- 496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Presentation and discussion of special topics.
- 497. *Research*. I, II, S. 1-15 hr.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

## Conjoined Basic Sciences Courses (CC MD)

320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
350. *Radiation Safety and Isotope Usage*. II. 1-2 hr. PR: Phys. 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; ERDA (formerly AEC) and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
370. *Medical Genetics*. (For medical and limited number of graduate students.) II. 1 hr. PR: Consent. Genetics and heritable diseases in man.
375. *Neurobiology*. (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of medical curriculum. (Graded as S or U.) The selective program for fourth-year medical students offers a wide range of opportunities in the basic sciences, medical specialties and subspecialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the Charleston Division, WVU Medical Center; the Wheeling Division, School of Medicine; and the Veterans Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans the individual program, with faculty advice. Flexibility is permitted. With consent of the instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See intramural and extramural folders, published annually, that describe the selective opportunities.)

## Microbiology

The Department of Microbiology offers programs of study leading to the degrees of Master of Science and Doctor of Philosophy in Medical Microbiology. Students are given extensive training in microbiological research methodology. The program aims towards training students capable of designing and carrying out their own research programs and teaching microbiology.

## Admission Requirements

Applicants must have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics—including calculus—in order to be considered for admission. Applicants must submit to the Department of Microbiology a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores—both aptitude and advanced. In addition, transcripts and an official application for admission to the Graduate School must be sent directly to the WVU Office of Admissions and Records. Applicants for admission to a degree program should have a grade-point average of 3.0, or better, and a score of 600, or above, on each of the GRE examinations. Early application is encouraged. Applicants desiring financial aid should complete their application before

January 1. All applications must be completed by June 1. Applications for admission in the spring semester must be completed by November 1.

## **Program Requirements**

Every student must take a two-semester sequence in basic microbiology (M. Bio. 310 and 317) and two semesters in biochemistry. Seminar is a required course for all students each semester that they are in residence. All students in the Department of Microbiology are also required to participate in teaching at least one semester a year. The remaining courses are selected by the student and the advisory committee from courses in microbiology numbered M. Bio. 317 or higher, and from outside the department.

The Department of Microbiology also has informal noon-hour journal clubs in immunology, virology, and bacteriology and parasitology.

The Master of Science program requires 30 hours of course work, of which at least 20 hours must be in microbiology. Six hours must be in research. A research thesis and a final oral examination are required. A grade-point average of at least 3.0 must be achieved. In general, two years are needed to complete the M.S. program.

The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation, and passing of qualifying and final oral examinations. Appropriate course work with a grade-point average of 3.0 is also required. Where appropriate, course work in related subjects such as computer science, physical chemistry, and statistics will be required. Three years are usually needed to complete the Ph.D. program.

For additional information, write to the Chairperson, Department of Microbiology, WVU Medical Center, Morgantown, WV 26506.

## **Research and Instruction**

*Research Areas*—Pathogenic Bacteriology: mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: nutrition and metabolism of a variety of pathogenic microorganisms; growth and protein synthesis in obligate intracellular bacteria. Genetics: basic studies on the mechanisms of genetics including transfer of genetic information. Virology: basic studies on viral-tumor relationships; virus-induced antigens in transformed cells; pathogenesis of lymphocytic choriomeningitis virus. Parasitology: host-parasite relationships between helminth parasites and insects and vertebrate hosts. Electron Microscopy: cytological studies of the fine structure of microorganisms and the influence of environment on these structures. Immunology: studies on the mechanisms of antigen-antibody reactions and the development of hypersensitivity; immunopathology of pulmonary disease; immunogenetics of lymphocytes; mechanisms of cellular immunity. Other programs: detection of environmental pollutants; effect of environmental agents on host resistance.

## **Microbiology (M. Bio.)**

26. *Microbiology*. (For students in the paramedical sciences.) I. 4 hr.
220. *Microbiology*. (For pharmacy students.) II. 4 hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.



223. *Microbiology*. (For medical technology students; graduate students with consent.) II. 5 hr. PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
224. *Parasitology*. (For medical technology students.) II. 4 hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
301. *Microbiology*. (For medical students only.) I. 5-7 hr. PR: Organic chemistry, biochemistry. Detailed study of pathogenic microorganisms. Emphasis on use of microbiology in solving clinical problems.
302. *Microbiology*. (For dental students only.) I. 5 hr. PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
310. *Structure and Activities of Microorganisms*. I. 2 hr. PR or Conc.: Biochemistry; consent. Structure and function of microbes.
317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem.
  - A. *Special Problems in Basic Immunology*. I. 2 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - B. *Special Problems in Basic Microbial Genetics*. I. 2 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - C. *Special Problems in Pathogenic Bacteriology*. II. 1 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - D. *Special Problems in Medical Virology*. II. 1 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - E. *Special Problems in Medical Mycology*. II. 1 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - F. *Special Problems in Parasitology*. II. 1 hr. PR or Conc.: M. Bio. 310. 310; biochemistry; consent.
327. *Parasitology*. (For graduate students.) II. 4 hr. PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*.

*Pathogenic Virology*. I. 3 hr. PR: M. Bio. 310 and 311 or equiv., consent. Pathogenesis of medically important viruses and mechanisms for their control.

*Pathogenic Bacteriology*. II. 3 hr. PR: M. Bio. 311, consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease.

*Clinical Laboratory Bacteriology*. I, II. 2-4 hr. PR: M. Bio. 311 or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. Laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)

*Microbial Genetics*. I. 4 hr. PR: M. Bio. 310 or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models. (Course will not be offered in 1982-83.)

*Immunobiology*. II. 2 hr. PR: M. Bio. 311 or M. Bio. 317 (A) and consent. Discussion of the biological and cellular aspects of immunology. Immunobiology, immunopathology, and cellular immunology receive strong emphasis. (This course is designed to complement Bioch. 423.) (Course will not be offered in 1982-83.)

*Medical Mycology*. I. 4 hr. PR: M. Bio. 311 or equiv. Advanced study of the fungi of medical importance, including the pathobiology of mycoses and toxicoses. (Course will not be offered in 1982-83.)

*Microbial Metabolism*. II. 2 hr. PR: M. Bio. 310, biochemistry, consent. Physiology, metabolism, and regulation of representative microbial groups.

*Microbial Metabolism Laboratory*. II. 1 hr. Open to departmental graduate students only. Research techniques in metabolic regulation.

*Comparative Cytology*. II. (Alternate Years.) 2-6 hr. PR: Consent. Projects in electron microscopy and cytochemistry. Instruction advanced techniques. Laboratory only.

*Cell and Molecular Biology of Eukaryotes*. II. 2-6 hr. PR: Consent. Interdepartmental team-taught course. Modular approach: (1) overview and cell growth; (2) membrane structure and function (3) tumor biology. In alternate years, the three modules offered are (1) above and (4) somatic cell genetics and chromosome structure; and (5) hormone action and gene expression.

*Tumor Virology*. II. 3 hr. PR: Biol. 315 or equiv., consent. A consideration of the molecular and biochemical aspects of viruses which cause tumors and the mechanisms by which they cause cellular transformation.

*Clinical Laboratory Virology*. S. 3 hr. per 6-week session. PR: Consent. Lectures and laboratories on isolation of viruses from clinical specimens. Includes serological methods.

496. *Seminar*. I, II. 1 hr. PR: M. Bio. 310 or equiv. (Graded as S or U.)

497. *Research*. I, II, S. 1-15 hr. PR: M. Bio. 310 or equiv. Students may enroll more than once. (Graded as S or U.)

## Pathology

*Research Areas*—Atherosclerosis; thrombosis; platelet aggregation and functions with correlative ultrastructural study, lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electronmicroscopic) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; histogenesis of neoplasia; biomedical application of laboratory medicine; applied laboratory studies in microbiology.

## Pathology (Path.)

128. *Introduction to General Pathology*. I. 2 hr. PR: Enrollment in dental hygiene or physical therapy, or consent. A study of the basic pathologic processes in man.

129. *Introduction to Oral Pathology*. II. 3 hr. PR: Path. 128, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.

328. *General Pathology*. (For dental students and graduate students, with consent of the chairperson.) II. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.

338. *Oral Pathology I*. II, S. 3 hr. PR: Path. 328, or consent. Clinical, radiographic, and microscopic discussion of local and systemic diseases affecting oral and paraoral structures.

350. *Hematology*. 3 hr. (For certain graduate students, with consent of the chairperson.) Includes morphologic description of formed elements of blood including classification of red blood cell, white blood cell, and platelet disorders. Case material and slide reviews are integral parts of the course work.

351. *Pathology and Laboratory Medicine*. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) I, II. 15 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systemic approach to disease states.
353. *Oral Pathology II*. I. 2 hr. PR: Path. 338; consent. Continuation of Path. 338.
355. *Clinico-Pathologic Correlation Conference*. (For dental students, third year.) II. 1 hr. PR: Path. 338, 353, consent. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 or 354; consent. Microscopic and gross specimens from selected autopsies.
382. *Oral Histopathology*. I, II. 1-2 hr. PR: Path. 338, 353, consent. Microscopic study of head and neck lesions.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.
491. *Advanced Study*. 1-3 hr. PR: Consent. Specialized study in subspecialty and such as blood banking, clinical chemistry, immunopathology. (Special lectures and/or seminar.)
497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology and Toxicology

Pharmacology and Toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the degrees of Master of Science and Doctor of Philosophy, with research concentrations in such areas as autonomic pharmacology, biochemical pharmacology, neuropharmacology, psychopharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, pharmacogenetics, malarial chemotherapy, and toxicology.

## Admission Requirements

Regular applicants for the graduate program in pharmacology and toxicology should present as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; five semesters of chemistry including two semesters of organic chemistry and one semester of physical chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination—including the advanced test in either chemistry or biology—are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write: Director of Graduate Studies, Department of Pharmacology and Toxicology, WVU Medical Center, Morgantown, WV 26506.



## **Master of Science**

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is available as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research project (thesis). The course work requirements for the M.S. in pharmacology and toxicology usually consist of Physiology 344 and 345, Biochemistry 231, Statistics 311, Pharmacology and Toxicology 361, 363, 364, 461, 462, and 497. Most students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research in lieu of a thesis.

## **Doctor of Philosophy**

Before official admission to candidacy for the doctorate, the student must satisfactorily complete both a grant writing exercise and an oral comprehensive qualifying examination. When a student has submitted a grant proposal, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department—is appointed and constitutes the oral examining body. The oral qualifying examination will be administered in January of the student's third year in the program.

## **Dissertation**

Upon admission to candidacy for the degree of Doctor of Philosophy, the candidate must select a topic for the dissertation under the direction of the candidate's adviser, complete a dissertation that makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

## **Research and Instruction**

*Research Areas* — Autonomic pharmacology: Autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release, and metabolism of transmitters and adrenal medullary hormones. Chemotherapy: Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: Biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system. Toxicology: Metabolism of toxic agents, pulmonary toxicology, environmental toxicology, perinatal pharmacology and toxicology. Electron microscopy: Effects of drugs on the ultrastructure of cells.

## Pharmacology and Toxicology (Pcol.)

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
242. *Pharmacodynamics and Therapeutics II*. (For pharmacy and graduate students.) I. 6 hr. PR: Phar. 240 or consent. Continuation of Phar. 240.
360. *Pharmacology*. (For dental and graduate students.) I. 4 hr. PR: Dental student standing or consent. Lecture and demonstrations on pharmacologic actions and therapeutic uses of drugs.
361. *Pharmacology*. (For medical students and a limited number of regular, full-time graduate students in medical basic sciences departments.) II. 6 hr. PR: Consent of department chairperson. Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
362. *Occupational Toxicology*. II. 3 hr. PR: Consent. General principles of toxicology with special emphasis on occupational health. Classes of chemicals which pose problems in the work place will be emphasized.
363. *Toxicology*. II. 3 hr. PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on biochemical and molecular mechanisms of chemical toxicity.
364. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology including physiochemical properties, absorption, distribution and metabolism of drugs, drug receptor theory, and molecular mechanisms of toxicity. (Offered Every Third Year.) (Course will be offered in 1983-84.)
365. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of specialized areas of pharmacology and toxicology including renal, endocrine, pulmonary, and cardiovascular pharmacology. (Offered Every Third Year.) (Course will be offered in 1984-85.)
367. *Advanced Neuropharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures on the actions of drugs on the central and peripheral nervous system. (Offered Every Third Year.) (Course will be offered in 1982-83.)
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pcol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology and toxicology. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.
490. *Teaching Practicum*. I, II. 1-2 hr. per sem. PR: Pcol. 361 and consent. Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology and toxicology. (For advanced graduate students.)
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. (Study may be independent or through specially scheduled lectures.)
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology

The objective of the Department of Physiology graduate program is to educate physiologists in the methods of conducting independent research of high quality and of effective teaching. The department's graduates are conversant with all aspects of physiology and are prepared to interact creatively with scientists in related fields. To this end the program leading to the degree of Doctor of Philosophy (Ph.D.) emphasizes close interaction of faculty with students and a high faculty/student ratio. The Master of Science (M.S.) program includes 24 hours of course work and a research project leading to the thesis.

## Admission Requirements

Individuals from a wide variety of backgrounds study physiology as one of the basic medical sciences. It is, in fact, not uncommon to find physiologists with such diverse backgrounds as biology, chemistry, physics, psychology, engineering, and mathematics. The department encourages the participation of qualified individuals from many undergraduate and graduate disciplines. There are, however, certain prerequisite courses a student must take either before enrollment or during the first year of the program. These prerequisites, designed to give a student the proper foundation for advanced study in physiology, are: Biology (2 semesters), Physics (2 semesters, calculus-based desirable), Calculus (2 semesters, 3 desirable), and Organic Chemistry (1 semester). Physical Chemistry is not required, but is desirable.

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, a completed departmental application form, and Graduate Record Examination scores (aptitude and one advanced test). A bachelor's degree or equivalent is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs may be obtained by writing to the Graduate Adviser, Department of Physiology, West Virginia University School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as June of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

## Doctor of Philosophy

The first year in the program normally includes the following courses: Graduate Physiology (12 hours), Biochemistry (7 hours), Statistics (3 hours), Neurophysiology (3 hours) or Neurobiology (6 hours), Graduate Colloquium (2 hours), Physiological Methods (variable credit), electives, and prerequisites (a limited number of which may be made up during the first year). The first-year curriculum familiarizes the student with some of the same basic sciences material presented to the medical students. Graduate (medical) physiology, biochemistry, and neurophysiology/neurobiology are part of the medical curriculum. The courses are team-taught by scientists specializing in each of the areas covered. In addition, the student is introduced to the full range of activities in the department through the Graduate Colloquium. Physiological Methods provides a foundation in the research strategies, techniques, and tools used by physiologists.

During the first summer, students may begin research projects in departmental research laboratories of their choice. They also may take elective courses or make up prerequisites.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses normally include: Advanced Physiology (12 hours), Graduate Colloquium (2 hours), Seminar (2 hours), and the Teaching Practicum (assisting in laboratory/demonstrations, conducting small-group conference sessions, giving lectures). Commonly chosen electives include pharmacology and toxicology, and advanced or specialized topics in biochemistry. The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. Students begin to present discussions of research topics in the Graduate Colloquium and Seminar.



After completion of the second academic year, the student takes a qualifying examination consisting of a written comprehensive part and both a written and oral research design part. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy in Physiology.

During the third and fourth years, the student may enroll in elective courses. Yearly participation in the Teaching Practicum provides experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research, with presentations about the research in the Graduate Colloquium. During these years the students will attend and present papers at national meetings of scientific societies (American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences.) The Ph.D. program is generally completed in four years.

## **Master of Science**

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first academic year and first summer are likewise identical for the master's and doctoral students. During the second year of the master's program, the student enrolls for 6 hours of Advanced Physiology, Graduate Colloquium, and sufficient electives to fulfill the required 24 hours of course work. In addition, 6 hours of research are directed toward completion of the thesis. The M.S. program is usually completed in two years.

## **Research and Instruction**

*Research Areas*—Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, muscle neural, renal, and respiratory physiology.

## **Physiology (Physi.)**

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lec., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relations to normal physiology.
248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lec., 2 lab.
341. *Physiological Methods I*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology. (Designed to be taken in conjunction with Physi. 345.)
342. *Physiological Methods II*. I. 1-4 hr. PR: Consent. Research techniques and strategies for physiology. (Designed to be taken in conjunction with Physi. 344.)
343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lec., 1 conf., 1 lab.

344. *Medical Physiology*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 5 lec., 1 conf.-lab.
345. *Medical Physiology II*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 5 hr. PR: Physi. 344 and consent of department chairperson. Continuation of Physi. 344. 5 lec., 1 conf.-lab.
346. *Neurophysiology*. (For graduate students in medical center basic sciences departments and a limited number of regular full-time graduate students.) II. 1-4 hr. PR: Math. 3 or 141, Phys. 1 and 2 or consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 1-3 lec., 1 conf.
350. *Graduate Physiology 1*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) I. 6 hr. PR: Calculus, college physics, organic chemistry, biology, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control.
351. *Graduate Physiology 2*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) II. 6 hr. PR: Physi. 344 or 350, and consent of department chairperson. Continuation of Physi. 350.
399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate status and consent. (Graded as S or U.)
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.
497. *Research in Physiology*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)
499. *Graduate Colloquium*. I, II. 1-6 hr. PR: Consent. (Graded as S or U.)

## School of Dentistry

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Dental auxiliary careers such as dental hygiene may be pursued. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

The School of Dentistry of West Virginia University offers programs of education leading to the degrees of Doctor of Dental Surgery, Master of Science with majors in Endodontics and Orthodontics, and Bachelor of Science in Dental Hygiene. One oral surgery internship and two oral surgery residencies are offered by the Department of Oral Surgery. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Seven general practice residencies are offered by the School of Dentistry, University Hospital, and the Charleston Area Medical Center. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by an associate dean, two assistant deans, and the clinical and medical center basic sciences chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of the University.

## **Doctor of Dental Surgery Program**

The School of Dentistry offers a program of education leading to the degree of Doctor of Dental Surgery (D.D.S.). The requirements for admission and the curriculum conform to the standards established by the American Dental Association Commission on Dental Accreditation.

### **Admission**

*Application for admission in the Fall of 1983 should be made promptly upon completion of the 1981-82 school year, even if the applicant has not completed all the requirements as listed.*

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry in the Fall of 1983, is November 1, 1982. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet and thus should be reviewed carefully by the applicant. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

Each applicant is required to satisfactorily complete the Dental Admission Test. It is suggested that the test be taken in April, before making application in June, for admission in the fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.



Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisite courses should include:

	Sem. Hr.
English Composition and Rhetoric, or equivalent .....	6
Zoology or Biology (with laboratory) .....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

All applications are reviewed and those most qualified are required to appear for a personal interview. The Committee on Admissions will advise the applicants of the time and place of the interview.

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements as stated above, appropriate completion of all application instructions, submission of all transcripts from each college attended, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding admission enrollment).

*Final acceptance of a student is contingent upon satisfactory completion of all requirements.*

## Promotion

At the end of each grading period (i.e., each academic semester or session) all students will have their individual progress reviewed by the academic standards committee convened for their class. The progress of each student in the curriculum is governed by a set of minimum acceptable performance standards upon which the academic standards committee bases its decisions.

The standards consist of three categories: (1) scholastic performance; (2) clinic utilization; and (3) professional development. Scholastic performance requires that each student must earn a specified grade-point average to be promoted to the succeeding year. Clinic utilization requires that each student must utilize a specified competency. Professional development is an important component of the study of dentistry. The criteria for determining this development are based on the students' personal behavior and patient management.

These performance standards are explained in detail in the "Curriculum and Academic Standards Statement for the WVU School of Dentistry." All first-year students are presented this statement prior to entering school and are required to acknowledge by their signature that they have read and accepted the conditions set by the material contained therein.

At the completion of each academic term, following the Committee on Academic Standards meetings, the status of each student is reported to the Dean and Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat the year, be suspended or

dismissed from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the appropriate Committee on Academic Standards and the Dean.

## **Requirements for Degree**

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.
2. Shall have completed the prescribed curriculum for each of the academic sessions.
3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.
4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

Attendance at the spring Commencement is voluntary. If you don't plan to attend, leave the complete mailing address to where you want your diploma mailed at the Dean's Office.

## **Curriculum**

The School of Dentistry recognizes its obligation to produce professionals capable of meeting the dental health needs of society and providing leadership for the dental profession. Therefore, the school offers a four-year program leading to the degree of Doctor of Dental Surgery (D.D.S.) that provides students with a learning environment in which to develop the technical competence, intellectual capacity, and professional responsibility necessary to meet the dental health needs of a society in a state of constant transformation. In order to insure the achievement of these goals, the dental curriculum is continually reviewed and revised.

The basic required courses in the curriculum are presented throughout the first six semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general practice track, basic biologic science track, and specific clinical interest track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. Fourth-year students are required to register for at least 3 hours of electives during each

# SCHOOL OF DENTISTRY CURRICULUM PLAN

	First Year (1,200 hr.)	Summer Session (320 hr.)	Second Year (1,200 hr.)	Summer Session (320 hr.)	Third Year (1,200 hr.)	Summer Session (320 hr.)	Fourth Year (1,200 hr.)
				Basic Dental Science	Basic Biologic Science	Bio-Clin. Sci. Comm. Dent.	
100		Basic Dental Science	Basic Biologic Science	Bio-Clinical Sciences		Clinical Dentistry	
				Comm.Dent.			
200	Basic Biologic Science			Clinical Dentistry	Bio-Clinical Sciences		Electives and Clinical Dentistry
		Bio-Clinical Sciences					
300		Clinical Dentistry	Basic Dental Science	Unsched.		Unscheduled Time	
		Unsched.					
400					Comm. Dent.		
500							
600			Bio-Clinical Sciences				
700	Basic Dental Science				Clinical Dentistry		
800							
900	Bio-Clinical Sciences		Comm. Dent.				
	Comm. Dent.		Clinical Dentistry				
1,000	Clinical Dentistry						Unscheduled Time
	Unscheduled Time		Unscheduled Time		Unscheduled Time		
1,100							
1,200							



semester enrolled, and must register for those clinical courses requiring added clinical experience to attain competency.

At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and, at the same time, they serve as a means of encouraging students to continue their education throughout their professional careers.

The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairperson and the Assistant Dean for Instruction. The student will pursue the approved curriculum through completion of the D.D.S. program.

Additional requirements include participation in mock board examinations by fourth-year students and six weeks of remote-site training by all students. Furthermore, students must satisfactorily complete all courses that are attempted.

Outstanding students having an accumulated grade-point average of 3.0 or above, having developed competency in all clinical disciplines, and having met all other requirements, are eligible for consideration for graduation at the end of the third eight-week summer session.

## **Dental Clinic**

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and renders a much needed service to several thousand patients annually.

## **Books and Instruments**

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses. All dental students must maintain a library of required textbooks through graduation. Used books, instruments, and equipment are not acceptable.

## **Organizations**

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

**WVU School of Dentistry Alumni Association.** In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

**Omicron Kappa Upsilon.** On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

**Dental Fraternities.** Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

## **Courses of Instruction in Dentistry (Dent.)**

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Assistant Dean for Instruction.

### **Community Dentistry**

Professor McCutcheon (Chairperson) and Thompson; Adjunct Associate Professors Murphy and Pawlicki; Associate Professors Ingersoll, Jagannathan, and Wilson; Assistant Professors Abrams, Dice, and Meckstroth; Visiting Educational Specialist Hutton; Instructors Bucklew, Kuhn, N. Taylor, and Sheldon.

- 315. *Community Dentistry 2. II. 3 hr.* A course encompassing the study of professional communication and the introduction to the theory and practice of preventive dentistry.
- 320. *Community Dentistry 1. II. 1 hr.* Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
- 326. *Community Dentistry 3. II. 2 hr.* A course covering the principles of human behavior and their application to understanding patient problems, patient management, and dentist-patient communication.
- 330. *Community Dentistry 4. I. 1 hr.* Lectures and field experience provide the student with the basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
- 332. *Community Dentistry 5. II. 1 hr.* A course providing lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition and microbiology.
- 352. *Community Dentistry 6. Yr. 2 hr.* Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.

354. *Community Dentistry* 7. II. 1 hr. PR: Departmental consent. Lectures covering the origin and development of dentistry.
394. *Community Dentistry* 8. I, II. 1-15 hr. Continued field experience in various aspects of community health.

### Dental Anatomy

Associate Professors Foor and VandenBosche; Assistant Professor Rodeffer; Instructor Lopez.

310. *Dental Anatomy and Occlusion*. I. 4 hr. Anatomy of individual teeth, both permanent and primary, in regard to form and function and their static and dynamic occlusal relationships.

### Dental Materials

Professors Overberger and Gaver; Associate Professor Weaver; Assistant Professors Hart and Roth.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Dental Practice Management

Professors Puderbaugh (*Chairperson*) Thomas, and Cady; Associate Professor Walker; Assistant Professors Hickman and Lopez.

325. *Practice Management* 1. Yr. and S. 2 hr. (Dental Auxiliary Utilization.) Designed through didactic and clinical experience to prepare dental students in the concepts of four-handed dentistry.
371. *Practice Management* 2. Yr. and S. 4 hr. PR: Dent. 325. Fundamentals of practice management, including organization and development of the practice, personnel and financial management, introduction of TEAM dentistry, continuation of clinical practice using auxiliaries, including those trained in expanded functions.
372. *Practice Management* 3. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.
373. *Practice Management* 4. II. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
375. *Practice Management* 5. I, II. 1-2 hr. PR: Dent. 371. Continuation of clinical practice using auxiliaries, including those trained in expanded functions.

### Endodontics

Professors Alberico, Biddington, Griffin, and Skidmore (*Chairperson*); Associate Professors Balaban and Christian; Assistant Professor Baur; Instructors Stewart and D. Taylor.

321. *Endodontics* 1. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
362. *Endodontics* 2. I. 1 hr. Lectures on rationale, diagnosis, prevention, and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae.
380. *Endodontics* 3. Yr. and S. 1-4 hr. Clinical endodontic instruction in order to develop the skills and judgment necessary to treat diseases of the dental pulp and their sequelae.



390. *Clinical Endodontics*. I, II, S. 1-5 hr. (May be repeated for credit.) PR: Graduate of an accredited dental school and admission to the Advanced Educational Program in Endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 1 hr. (May be repeated for credit.) PR: Graduate of an accredited dental school and admission to the Advanced Educational Program in Endodontics or consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Hospital Dentistry

Professors Moorman and Welch (*Chairperson*); Assistant Professors Bakos, Montgomery, and Mott; Instructors Black, Brace, Coffman, Cogan, Courtney, Fagan, Farris, Haddox, Hancock, Jackfert, Klein, Lee, Patthoff, Payne, Salzer, Skaff, Snyder, Wilbourn, and Wine.

333. *Physical Diagnosis* 1. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
347. *Management of Medical/Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.
374. *Principles of Medicine* 4. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.
395. *Hospital Dentistry Practicum*. I, II, S. 1-15 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in Dent. 349.

## Operative Dentistry

Professors Sausen (*Chairperson*) and Gaver; Associate Professors Chapman, Frye, VandenBosche, Weaver, and Foor; Assistant Professors Gladwin, Hart, Jackson, Kelly, Naylor, Rodeffer, and Utt; Instructor Bennett.

304. *Operative Dentistry* 1. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Gold inlay technique introduced. Characteristics and treatment of caries emphasized.
322. *Operative Dentistry* 2. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Preparation is made for entering clinical activity. Certain fundamentals of pedodontics introduced.
329. *Operative Dentistry* 3. I. 2 hr. Initiation of clinical practice with comprehensive examinations and treatment planning of assigned patients. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.

## SCHOOL OF DENTISTRY COURSE SCHEDULE

First Year—Didactic Courses	Credit Hours	1st Sem.	2nd Sem.	S.
300—Anesthesiology .....	1		x	x
303—Oral Diagnostic Techniques .....	2		x	
304—Operative Dentistry 1 .....	4		x	
305—Biochemistry .....	4		x	
306—Gross Anatomy of the Trunk and Extremities ....	4		x	
307—Gross Anatomy of Head & Neck & Neuroanatomy	5		x	
309—Microanatomy and Organology .....	4	x		
310—Dental Anatomy and Occlusion .....	4	x		
311—Periodontics 1 .....	1			x
312—Dental Materials .....	3	x		
313—Removable Prosthodontics 1 .....	3	x		
314—Fixed Prosthodontics 1 .....	1			x
315—Community Dentistry 2 .....	3		x	
316—Removable Prosthodontics 2 .....	1			x
318—Oral Histology and Embryology .....	2	x		
319—Pediatric Dentistry 1 .....	1		x	
320—Community Dentistry 1 .....	1	x		
321—Endodontics 1 .....	2			x
322—Operative Dentistry 2 .....	2			x
323—Clinic Orientation .....	1			x
<b>Second Year—Didactic Courses</b>				
302—Microbiology .....	5	x		
325—Practice Management 1 .....	2	x	x	x
326—Community Dentistry 3 .....	2		x	
327—Oral Radiology 1 .....	1	x	x	x
328—General Pathology .....	5		x	
329—Operative Dentistry 3 .....	2	x		
330—Community Dentistry 4 .....	1	x		
332—Community Dentistry 5 .....	1		x	
333—Physical Diagnosis .....	1		x	
334—Removable Prosthodontics 3 .....	3	x	x	
335—Pediatric Dentistry 2 .....	2	x	x	
336—Fixed Prosthodontics 2 .....	5	x	x	
337—Oral Diagnosis 2 .....	1		x	
338—Oral Pathology 1 .....	3		x	
339—Oral Surgery 1 .....	1		x	
340—Periodontics 2 .....	1	x		
341—Removable Prosthodontics 4 .....	2			x
343—Fundamentals of Physiology .....	5	x		
345—Principles of Orthodontics .....	1		x	
346—Orthodontic Technics .....	1			x
347—Management of Medical/Dental Emergencies ....	1		x	
348—Operative Dentistry 4 .....	1			x
349—Hospital Dentistry .....	1			x
<b>Second Year—Clinical Courses</b>				
376—Removable Prosthodontics 6 .....	2-6	x	x	x
377—Periodontics 4 .....	1-4	x	x	x
380—Endodontics 3 .....	1-4		x	x
383—Operative Dentistry 6 .....	2-8	x	x	x
384—Oral Surgery 3 .....	2-6	x	x	x
386—Pediatric Dentistry 4 .....	1-5	x	x	x
387—Clinical Oral Diagnosis 3 .....	1-4	x	x	x
389—Fixed Prosthodontics 4 .....	2-5		x	x
396—Clinical Oral Radiology 2 .....	1-3	x	x	x

348. *Operative Dentistry 4*. S. 1 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Treatment planning procedure is reviewed and examined.

## SCHOOL OF DENTISTRY COURSE SCHEDULE (Continued)

Third Year—Didactic Courses	Credit Hours	1st Sem.	2nd Sem.	S.
350—Removable Prosthodontics 5 .....	2	x	x	
352—Community Dentistry 6 .....	2	x	x	
353—Oral Pathology 2 .....	2	x		
354—Community Dentistry 7 .....	1		x	
355—Clinical Pathology Correlation Conference .....	1		x	
357—Fixed Prosthodontics 3 .....	2	x	x	
358—Operative Dentistry 5 .....	1		x	
359—Oral Surgery 2 .....	2	x	x	
360—Pharmacology .....	4	x		
361—Pediatric Dentistry 3 .....	1		x	
362—Endodontics 2 .....	1	x		
363—Periodontics 3 .....	1		x	
365—Clinical Orthodontics 1 .....	1		x	
371—Practice Management 2 .....	4	x	x	x
372—Practice Management 3 .....	1		x	
373—Practice Management 4 .....	1		x	
374—Principles of Medicine .....	2	x		

### Third Year—Clinical Courses

376—Removable Prosthodontics 6 .....	2-6	x	x	x
377—Periodontics 4 .....	2-4	x	x	x
380—Endodontics 3 .....	1-4	x	x	x
383—Operative Dentistry 6 .....	2-8	x	x	x
384—Oral Surgery 3 .....	2-6	x	x	x
386—Pediatric Dentistry 4 .....	1-5	x	x	x
387—Clinical Oral Diagnosis 3 .....	1-4	x	x	x
389—Fixed Prosthodontics .....	2-5	x	x	x
396—Clinical Oral Radiology 2 .....	1-3	x	x	x

### Fourth Year—Clinical Courses

375—Practice Management 5 .....	1-2	x	x	
376—Removable Prosthodontics 6 .....	2-6	x	x	x
377—Periodontics 4 .....	1-4	x	x	x
380—Endodontics 3 .....	1-4	x	x	x
383—Operative Dentistry 6 .....	2-8	x	x	x
384—Oral Surgery 3 .....	2-6	x	x	x
385—Orthodontics 2 .....	1-3	x	x	x
386—Pediatric Dentistry 4 .....	1-5	x	x	x
387—Clinical Oral Diagnosis 3 .....	1-4	x	x	x
389—Fixed Prosthodontics 4 .....	2-5	x	x	x
394—Community Dentistry 8 .....	1-2	x	x	
395—Hospital Dentistry Practicum .....	1-15	x	x	x
396—Clinical Oral Radiology 2 .....	1-3	x	x	x
397—Special Topics* .....	1-15	x	x	

\*The relationship of the number of elective and/or required hours during the fourth year may vary with each student depending upon the individual student's progress.

358. *Operative Dentistry 5. II.* 1 hr. More complex and advanced techniques for clinical practice with emphasis on new developments throughout the scope of operative dentistry.

383. *Operative Dentistry 6. Yr. and S.* 2-8 hr. Instruction in the clinic setting includes comprehensive diagnosis and treatment planning, computer assisted records, plaque control, caries control, and single tooth restorations. Sufficient variety and depth of experience occurs to obtain competence for independent practice of operative dentistry.

397. *Special Topics. (Fourth Year.) I and II.* 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.



## Oral Diagnosis and Radiology

Professors Graham (*Chairperson*) and Thomas; Associate Professors Bowers, Pifer, and H. Smith; Assistant Professor Fotos.

- 303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive health care.
- 323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.
- 327. *Oral Radiology* 1. Yr. and S. 1 hr. The physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
- 337. *Oral Diagnosis* 2. II. 1 hr. Didactic instruction with further application of diagnosis procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
- 387. *Clinical Oral Diagnosis* 3. Yr. and S. 1-4 hr. Clinical application of principles presented in Dent. 303 and 337, providing opportunities for observation and analysis of clinical problems.
- 396. *Clinical Oral Radiology* 2. Yr. and S. 1-3 hr. Clinical application of principles presented in Dent. 303 and 327 with additional instruction in techniques and interpretation of radiographs with special emphasis to role played in oral diagnosis.
- 397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Pathology

Associate Professors Bouquot (*Chairperson*) and Keyes.

- 338. *Oral Pathology* I. (For dental students.) II. and S. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
- 353. *Oral Pathology* II. (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Continuation of Dent. 338.
- 355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
- 382. *Advanced Oral Histopathology*. (For dental and graduate students, residents, and interns.) II. 1 hr. PR: Consent; Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
- 397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
- 401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents, and interns.) I, II, S. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

## Oral Surgery

Professor Emeritus Campbell; Professor Graves (*Chairperson*); Associate Professors Davidson and Fogarty; Assistant Professors Gilbert, Haley, King, Oliverio, Van Sickels, and Wilson.

300. *Anesthesiology*. II and S. 1 hr. Introduction to general anesthesia; lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.
339. *Oral Surgery 1*. II. 1 hr. Didactic instruction in basic surgical principles as applied to the extraction of teeth and dentoalveolar surgery.
359. *Oral Surgery 2*. I and II. 2 hr. PR: Consent. Didactic instruction in patient evaluation, complicated exodontia, preprosthetic surgery, diagnosis, surgical and adjunctive treatment of disease, injuries, and defects of human jaws and associated structures.
384. *Oral Surgery 3*. Yr. and S. 2-6 hr. Clinical instruction in outpatient and inpatient oral surgery necessary to provide comprehensive care for the dental patient.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

## **Orthodontics**

Professor Merow (*Chairperson*); Associate Professors Bonello and Moore; Assistant Professors Dempsey, H. E. Martin, J. R. Martin, Tatich, Valentine, and Wilfong.

345. *Principles of Orthodontics*. II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
346. *Orthodontic Technics*. S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
365. *Orthodontics 1*. II. 1 hr. Introduction to clinical orthodontics; lectures on case analysis, treatment planning, and clinical procedures involved in interceptive, preventive, and adjunctive treatment of malocclusions.
385. *Orthodontics 2*. Yr. and S. 1-3 hr. Clinical management of selected malocclusion problems.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Pediatric Dentistry**

Professor Nash (*Chairperson*); Associate Professor Fenton; Assistant Professors Bassin, Gwynn, and Wilkerson; Instructor Nicholson.

319. *Pediatric Dentistry 1*. II. 1 hr. PR: Consent. Normal growth and development presented from physical, intellectual, psychological, and oral perspectives. Behavior of children in dental environment reviewed and strategies for management examined.
335. *Pediatric Dentistry 2*. I and II. 2 hr. PR: Consent. Didactic instruction foundational to the dental care to children presented in the following modules of instruction: growth and development, behavior management, oral diagnosis/treatment planning/case presentation, prevention, restorative dentistry, pulpal therapy, management of the development occlusion and trauma to the dentition and oral structures.
361. *Pediatric Dentistry 3*. II. 1 hr. PR: Consent. Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: treatment planning considerations and applications, abnormal dental development, oral habits, and dental care for handicapped children.

386. *Pediatric Dentistry 4. I, II, S.* 1-5 hr. Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.
397. *Special Topics. (Fourth Year.) I and II.* 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Periodontics**

Professor Morrison (*Chairperson*); Associate Professors Crout and Hornbrook; Assistant Professors Oliver, Reed, Rosenfeld, and Wanker.

311. *Periodontics 1. S.* 1 hr. Introduction to periodontal diseases, their diagnosis and treatment. Laboratory instruction is included.
340. *Periodontics 2. I.* 1 hr. Intermediate didactic instruction in periodontal therapy including basic surgery and post-operative care.
363. *Periodontics 3. II.* 1 hr. Advanced didactic instruction in periodontal therapy including special surgical procedures.
377. *Periodontics 4. Yr. and S.* 1-4 hr. Clinical experience in the diagnosis and treatment of periodontal diseases.
397. *Special Topics. (Fourth Year.) I and II.* 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Fixed Prosthodontics**

Professor Emeritus Adams; Professors Bianco (*Chairperson*) and Tucker; Associate Professors Connor and Kwiatkowski; Assistant Professor N. Smith; Instructors Bramble, Jackson, and W. Taylor.

314. *Fixed Prosthodontics 1. S.* 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
336. *Fixed Prosthodontics 2. Yr.* 5 hr. Lectures and laboratory exercises on principles and technics of crown and bridge prosthodontics. Types of dental bridges, their indications, and contraindications.
357. *Fixed Prosthodontics 3. Yr. and 2 hr.* PR: Consent. Lectures concerned with clinical practice; diagnosis, treatment planning, treatment procedures, ceramics, esthetics, and occlusion.
389. *Fixed Prosthodontics 4. Yr. and S.* 2-5 hr. Clinical application of the theory and practice of crown and bridge dentistry.
397. *Special Topics. (Fourth Year.) I and II.* 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Maxillofacial Prosthodontics**

Professor Bianco (*Chairperson*); Associate Professor Kluth; Assistant Professor Lee.

397. *Special Topics. (Fourth Year.) I and II.* 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Removable Prosthodontics**

Professors Bianco (*Chairperson*) and DeCounter; Associate Professor Van Riper; Assistant Professors Harper and Roth; Instructors Beaumont, Camele, Sauter, and Stewart.



313. *Removable Prosthodontics 1. I.* 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.
316. *Removable Prosthodontics 2. S.* 1 hr. Lectures and laboratory practice in maxillomandibular relationships and occlusion.
334. *Removable Prosthodontics 3. Yr.* 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.
341. *Removable Prosthodontics 4. S.* 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.
350. *Removable Prosthodontics 5. Yr.* 2 hr. Lectures concerned with clinical practice of complete and partial removable prostheses.
376. *Removable Prosthodontics 6. Yr. and S.* 2-6 hr. Continued application of the theory and practice of removable prosthodontics.
397. *Special Topics. (Fourth Year.) I and II.* 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Advanced Education Programs

The School of Dentistry offers advanced education programs. The Department of Endodontics and the Department of Orthodontics offer programs of advanced study leading to the degrees of Master of Science. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Pharmacology and Toxicology, and Physiology. (See pages 36-51 of this Catalog, or the WVU Graduate School Catalog.) The Department of Oral Surgery offers one oral surgery internship and two residencies. Seven general practice residencies also are offered by the School of Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Advanced Education Programs.

## Endodontic Program

### Master of Science

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.). The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry and is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be processed in the School of Dentistry and will be recommended to the Graduate School for admission. Applicants approved for admission to the program will be notified soon after January 15.

### Requirements for Admission to the Endodontic Program

1. Graduation from an accredited school of dentistry.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.

3. Each applicant must file with the Department of Endodontics all information requested in the departmental application form.

### **Requirements for Master of Science Degree**

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to endodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 57 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (7 hours).
6. Must have demonstrated satisfactory clinical competency in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

### **Dentistry (Dent.)**

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

### **Endodontics (Dent.)**

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 1 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
490. *Endodontic Teaching*. S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.
497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

### **Microbiology (M. Bio.)**

310. *Structure and Activities of Microorganisms*. I. 2-7 hr. PR: Consent. Structure and activities of microorganisms: their structure, metabolism, nutrition, growth, and genetics. (Students can enroll for one to three parts.)
311. *Principles of Infection and Resistance*. I. 1-5 hr. PR: Consent. Introduction to the principles of innate and acquired resistance and to the mechanism of pathogenesis of medically important microorganisms. (Students can enroll for one to three parts.)

## **Pathology (Path.)**

382. *Oral Histopathology*. (For graduate and dental students.) I, II. 1-2 hr. PR: Consent. Advanced study of the microscopic aspects of oral and paraoral disease through weekly seminars with emphasis placed on diagnosis.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

## **Pharmacology and Toxicology (Pcol.)**

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.

## **Statistics (Stat.)**

311. *Statistical Methods 1*. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (*Equiv. to Ed. P. 311 and Psych. 311.*)

# **Orthodontic Program**

## **Master of Science**

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of 24 months (two academic years and two summers) of full-time residency in the School of Dentistry, and is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be recommended to the Graduate School for admission. Those applicants approved for admission to the program will be notified soon after January 15.

## **Requirements for Admission to the Orthodontic Program**

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the department all information requested in the department application form.

## **Requirements for Master of Science Degree**

1. Fulfillment of requirements of the Graduate School.
2. Twenty-four months (two academic years and two summers) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 50 credit hours. These include 35 hours of orthodontic courses, a minimum of 9 hours of selected basic sciences subjects, a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.



## **Anatomy (Anat.)**

315. *Craniofacial Osteology and Myology*. I. 3 hr. PR: Dental, medical, or graduate student standing or consent. Study of craniofacial embryology, morphology, and physiology, with special emphasis on articulations and their clinical applications.
316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: Anat. 315 or consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

## **Orthodontics (Dent.)**

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.
419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
420. *Cephalometrics*. I, II, S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
423. *Growth and Development*. I, II, S. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
497. *Research*. I, II, S. 1-15 hr.

## **Pathology (Path.)**

401. *Advanced Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

## **Statistics (Stat.)**

311. *Statistical Methods* 1. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv. to Ed. P. 311 and Psych. 311.)

# Dental Hygiene Program

The Dental Hygiene Program is a department of the School of Dentistry. The four-year dental hygiene curriculum combines the advantages of both a liberal arts and a professional education. This curriculum format has departed from the conventional, but there is a definite conviction that the inclusion of many disciplines provides greater strength to the program. The educational objectives of the Dental Hygiene Program are:

To prepare individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers of those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States. Presently, these services include: observation, recording, prevention, treatment, education, and communication.

To prepare individuals capable of performing the clinical skills delegated to any dental auxiliary (excluding the dental laboratory technician).

To prepare dental hygienists to teach clinical skills and to present didactic information in dental auxiliary education programs.

To prepare individuals capable of performing coordinative and administrative functions in public health and community related areas.

To prepare individuals for the dental hygiene profession who have a keen sense of social awareness and professional responsibility.

To prepare dental hygienists to continue their professional development past graduation through formal training, self-study, and independent thought.

To prepare individuals who have the capability to understand and adapt to new developments and changes in the scientific, sociologic, and practical factors pertaining to health.

To provide the educational foundation for higher education.

Upon completion of all requirements and with the recommendation of the School of Dentistry, the candidate is awarded a bachelor of science degree in Dental Hygiene.

The Dental Hygiene curriculum is structured in accordance with the standards specified for a Dental Hygiene Program by the Commission on Accreditation of the American Dental Association. The program has been fully accredited by this organization since 1965.

## Admission

Students enter dental hygiene as freshmen, and the general admission policies of West Virginia University are followed. The applicant must be a graduate of an accredited high school or preparatory school and have completed one unit of algebra, one unit of geometry, four units of English, biology, and chemistry. Good grades are expected, and applicants should rank in the upper one-third of their graduating class. Particular attention is given to academic achievement in science courses.

The American College Testing Program (ACT) examination is required of high school applicants. A high school counselor can supply information concerning this examination. The Dental Hygiene Aptitude Test is required of every applicant. A brochure with detailed information and instructions about this test is mailed with application materials or may be obtained by writing the American Dental Hygienists' Association, Suite 1136, 666 North Lakeshore Drive, Chicago, IL 60611.

In addition to a special application form for dental hygiene, each candidate for admission is supplied with three standardized reference forms. Each applicant is requested to have one dental hygienist and two other individuals return the forms directly to the Department of Dental Hygiene.

The personal qualifications, scholastic record, test scores, and recommendation of each applicant are reviewed by the Dental Hygiene Admissions Committee. After reviewing these credentials, the committee will request an interview with those applicants who are most qualified. The applicant will be notified by letter of the date, time, and place of the interview.

The competition for entrance into dental hygiene is extremely keen. *Nonresidents should recognize that preference is given to West Virginia residents. Only those nonresidents with the highest qualifications will be considered.*

For application materials the applicant should write to the Department of Dental Hygiene, West Virginia University, or the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. Applicants should apply and complete aptitude tests as early as possible in the year preceding the year admission is desired. Applications are available in September and are not accepted after March 1.

## Promotion

At the end of each semester, the status of each dental hygiene student is reviewed by the Dental Hygiene Committee on Academic Standards. This committee then makes recommendations to the Dean. Final disposition in each case is the prerogative of the Dean and the Chairperson of Dental Hygiene.

Unconditional promotion normally depends upon fulfillment of all course requirements and the attainment of both a minimum cumulative grade-point average and a minimum science-dental hygiene grade-point average. These minimum grade-point averages are: a 1.50 for promotion to the second year; a 1.75 for promotion to the third year; a 2.0 for promotion to the fourth year; and a 2.0 for graduation. The courses (or equivalents) utilized to calculate the science-dental hygiene grade-point average are:

Biology 2	Anesthesiology 300	Dental Hygiene 152
Chemistry 11	Dental Hygiene 1	Dental Hygiene 154
Chemistry 12	Dental Hygiene 2	Dental Hygiene 155
Anatomy 101	Dental Hygiene 66	Dental Hygiene 168
Pathology 128	Dental Hygiene 85	Dental Hygiene 169
Pathology 129	Dental Hygiene 90	Dental Hygiene 172
Microbiology 26	Dental Hygiene 105	Dental Hygiene 174
Physiology 141	Dental Hygiene 120	Dental Hygiene 202
Pharmacology and	Dental Hygiene 125	Dental Hygiene 205
Toxicology 160	Dental Hygiene 150	Dental Hygiene 206

Students who do not qualify to be promoted unconditionally may be placed on probation or may be suspended from further studies in the Department of Dental Hygiene. Probationary status implies that the student will be allowed to make up deficiencies or be given an opportunity to repeat a year.

If a student is promoted on probation, the student must reach the required minimum standards specified above. Students on probation who do not obtain these standards will be reevaluated by the committee.



The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Professional Organizations

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of student membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

*American Association of Dental Schools.* This association of dental educational institutions and faculties has as its primary purpose to promote and improve dental education. Dental hygiene students may join as student members.

*West Virginia University School of Dentistry Alumni Association.* Graduates of the Department of Dental Hygiene may join and participate in all activities of the Alumni Association.

## Courses of Instruction in Dental Hygiene

Associate Professors Komives (*Chairwoman*), Crystal, Kaplan, and Sherrill; Assistant Professors DeBiase, Fotos, Graves, and Krouse; Instructors McLellan and Monti; School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this *Catalog* or the *WVU Undergraduate Catalog*.)

### Dental Hygiene (Dnt. Hy.)

1. *Orientation to Dental Hygiene.* I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
2. *Introduction to the Dental Specialties.* II. 3 hr. PR: Dnt. Hy. 1 or consent. Survey of functions and responsibilities of each of the dental specialties. Emphasis on the role of the dental assistant and dental hygienist in each type of practice.
66. *Technical Expression and Dental Literature.* I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.
85. *Oral Anatomy.* II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.
90. *Oral Histology.* II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention.* I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics.* II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics.* II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.

## DENTAL HYGIENE CURRICULUM PLAN

First Year				Second Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Engl. 1	3	G.P.E. 2	1	Anat. 101	4	Physi. 141	4
G.P.E. 1	1	Chem. 12	4	Path. 128	2	Path. 129	3
Core A		Dnt. Hy. 2	3	Dnt. Hy. 105	2	Pcol. 160	3
(Spch. 11 & 12)	3	Dnt. Hy. 85	3	Nutr. 71	3	Dnt. Hy. 120	1
Biol. 2	4	Dnt. Hy. 90	3	Ed. P. 105	3	Dnt. Hy. 125	4
Chem. 11	4	Core B		M. Bio. 26	4	Engl. 2	3
Dnt. Hy. 1	2	(Soc.&A. 1)	3				
Dnt. Hy. 66	1						
	<u>18</u>		<u>18</u>		<u>18</u>		<u>18</u>
Third Year				Fourth Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Dnt. Hy. 168	1	Dnt. Hy. 169	1	Dnt. Hy. 202	2	Dnt. Hy. 206	2-4
Core A (Elective)	3	Dnt. Hy. 174	2	Dnt. Hy. 205	6	Electives	
Core B (Psych. 1)	3	Core B	3	Core B		Maximum	15
Dnt. Hy. 152	2	(Psych. 141 or 164)		(Upper Division		Minimum	12
Anes. 300	1	Core A (Electives) 6		Soc.&A.)	3		
Dnt. Hy. 172	2	Dnt. Hy. 150	2	Electives			
Dnt. Hy. 155*		Dnt. Hy. 155*		Maximum	7		
Dnt. Hy. 154*		Dnt. Hy. 154*		Minimum	4		
					<u>15-18</u>		<u>14-18</u>

\*Year courses: Dnt. Hy. 155—6 credit hours: Dnt. Hy. 154—4 credit hours.

150. *Dental Health Education*. II. 2 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.
154. *Clinical Dental Hygiene*. I, II. 4 hr. PR: Dnt. Hy. 125. Lectures and clinical application of dental hygiene principles and technics.
155. *Expanded Functions*. I, II. 6 hr. PR: Enrollment in dental hygiene. Lecture, laboratory, and clinical course covering the materials and technics of restorative dentistry and expanded duties for the dental hygienist.
168. *Periodontics*. I. 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics*. II. 1 hr. PR: Dnt. Hy. 168. A sequential course to Dnt. Hy. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health*. I. 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.

- 205. *Advanced Clinical Dental Hygiene*. I. 5-6 hr. PR: Senior enrollment in dental hygiene. Role of the dental hygienist in an orthodontic practice, pre- and post-operative care of surgical patients, and introduction to research. Students gain clinical experience in both traditional and expanded duties of the dental hygienist.
- 206. *Advanced Clinical Dental Hygiene*. II. 2-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.
- 220. *Special Topics in Dental Hygiene*. I, II. 1-22 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

## School of Medicine

The School of Medicine began as the College of Medicine in 1902. For ten years this program was affiliated with the College of Physicians and Surgeons of Baltimore, Md. In 1912 the School of Medicine had its formal beginning as an independent school offering the first two years of the medical curriculum. The School of Medicine moved from the Downtown Campus to the Medical Center in 1957 and inaugurated a four-year program in 1960. This coincided with the opening of University Hospital. In 1961, the first M.D. degrees were awarded to 15 students.

In 1945 the School of Medicine established a curriculum in Medical Technology leading to a degree of bachelor of science. The first graduates were awarded a combined degree by the College of Arts and Sciences and the School of Medicine in 1947. The Program of Medical Technology was established in the School of Medicine in 1961. The division of Physical Therapy was established and accepted its first class of 16 students in 1970. The division offers the final two years of a baccalaureate program leading to a degree in physical therapy.

West Virginia University Medical Center—Charleston Division was established in October, 1972, with the affiliation of WVU and the Charleston Area Medical Center. The Charleston Division offers programs for third and fourth-year medical students in a variety of required and elective courses.

West Virginia University School of Medicine—Wheeling Division was established in 1974. This program is available for many elective opportunities for students in the fourth year.

## Committees (Chairpersons)

*Academic Standards:* Gunter N. Franz.

*Biomedical Research Support:* Duane E. Haines.

*Dean's Committee to Clarksburg VA Hospital:* John E. Jones.

*Curriculum Committee:* James L. Culberson.

*Executive Faculty:* John E. Jones.

*Educational Advisory:* John E. Jones.

*Faculty Promotion:* Michael G. Mawhinney.

*Medical School-Hospital Liaison to Student Body:* John E. Jones.

*Student Admissions:* John F. Foss.

*E. J. Van Liere Student Research Convocation:* Wilbert E. Gladfelter.

*Outstanding Teachers:* L. Blair Thrush.

*Continuing Medical Education:* Robert L. Smith.

*Intern Advisory:* David Z. Morgan.

*Admissions Committee for Medical Technology:* Ann W. Sharpe.

*Admissions Committee for Physical Therapy:* Carolyn E. Barnes.



## Degree

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Combined M.D.-Ph.D. Program

This should be considered only by students who have shown exceptional interest and promise. All of the admission requirements of the School of Medicine and the Graduate School will apply. Specific course requirements and procedures for monitoring progress will be detailed by both schools.

## Admissions

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants who have ties to the state of West Virginia will also be considered. Careful consideration is given to those personal qualifications which bear upon fitness of the applicants for the study and practice of the profession.

## When to Apply for Admission

Application for admission in August, 1983, should be made beginning June 1, upon completion of the 1981-82 school year. The latest date for filing an application is November 30, 1982. It is desirable for applicants to file early and to make certain that New Medical College Admission Test scores, current transcripts, and letters of recommendation are available to the Committee on Admissions.

## College Credit Required

The applicant should present a broad general education including a major in some field, not necessarily a natural science. The Admissions Committee needs evidence of excellence of academic performance and steady progress toward a goal.

An excess of credit hours or higher degrees does little to offset the disadvantages of low grades in securing admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from the West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Committee on Admissions.

English .....	1 year
Biological Sciences (with laboratory) .....	1 year
Inorganic Chemistry (with laboratory) .....	1 year
Organic Chemistry (with laboratory) .....	1 year
Physics (with laboratory) .....	1 year
Social or Behavioral Sciences .....	1 year

A total of 90 semester hours of work, exclusive of Military Science (ROTC) and General Physical Education, is required.

It is recognized that applicants for medical school may have very diverse undergraduate backgrounds with a variety of majors. While many undergraduate courses, aside from the required prerequisites, might be

beneficial in providing additional background for medical school, the choice of such courses should be determined by the academic strengths and weaknesses of the particular applicant.

## **New Medical College Admission Test**

The scores of the New Medical College Admission Test (New MCAT) are used by the Admissions Committee in considering an applicant for admission. For this reason, it is strongly recommended that students take the test in the Spring before making application for admission. Delaying the test until Fall, even though all science courses may not have been completed, jeopardizes an applicant's opportunity since no final consideration is given until New MCAT scores are obtained by the Admissions Committee. No applicant can be considered who delays taking the New MCAT until Spring of the year of expected entry. Information concerning the time and place of the test can be obtained from your premedical adviser or committee. The New Medical College Admission Test is required of all applicants and it ordinarily must have been taken within the past two years before applying.

## **Personal Interview**

No applicant is admitted without an interview by the Committee on Admissions. Currently, all residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Committee on Admissions. The applicant is notified of the time and place of the interview. Interviews and consideration of applicants begin in September.

## **Conditions Following Acceptance**

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Committee on Admissions.

It should also be apparent that furnishing or causing to be furnished false information for the purpose of the School of Medicine application constitutes grounds for disciplinary action, including but not limited to expulsion or revocation of the acceptance.

## **Admission to Advanced Standing**

Increasing numbers of inquiries are being received seeking consideration of enrollment in the WVU School of Medicine with advanced standing. Only a limited number of such requests can be processed. Transfer ordinarily will be considered only at the end of the second year. The applicant must have presented results of the Medical Science Knowledge Profile (MSKP) Test and must present certification of good standing in the school from which the student is transferring.

## **Examinations and Evaluation of Student Progress**

It is the policy of the School of Medicine that the several departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. A Satisfactory (S) or Unsatisfactory (U) designation is formally recorded for each course. In addition, each department

files in the Office of the Dean a narrative evaluation of the work of each student identifying strengths and weaknesses and suggesting remedial or corrective measures, if appropriate.

In addition to departmental examinations, which help serve as a basis for recording grades in individual courses, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion. National Board of Medical Examiners, Part I, examinations are given as part of the testing of achievement in individual disciplines and are incorporated in the final grade for that course. The student is encouraged to take the complete Part I examination as a candidate for National Board certification near the end of the second year. The Part II examination is required as a comprehensive test in clinical science at the end of the third year and results are incorporated in the final grades for clinical clerkships.

The overall performance of the student on the National Boards will be taken into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners examination is one mechanism by which a license may be obtained.

## Promotions and Progress

The Committee on Academic Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

1. The Committee on Academic Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the committee, the student's overall performance does not meet the academic standards of the School of Medicine.

2. No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

3. All courses and all classes at the School of Medicine are graded as Satisfactory (S) or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The S and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.



4. Readmission of a dismissed student is the prerogative of the Committee on Admissions after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic Standards.

5. All nondisciplinary matters are governed by the concept of academic due process.

6. Upon concurrent recommendation of the Committee on Admissions, the Committee on Academic Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

*In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.*

## **Incomplete Courses**

The grade of Incomplete (I) is given when the instructor believes the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure unless special permission to postpone the work is obtained from the Committee on Academic Standards (University rule.) It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses.

## **Departure From Scheduled Work**

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of Medicine. This permission is not valid until it has been reported to the Assistant to the Dean of Admissions and Records, Medical Center, for record.

## **Departure**

Interruption of academic work must be approved by the Committee on Academic Standards in its recommendation to the Dean except in urgent circumstances, such as for illness.

## **Honor Code**

Students in the School of Medicine agree to abide by the provision of an honor code which requires ethical and moral standards of conduct in all situations.

## **Immunizations**

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

## University Hospital and Outpatient Clinics

University Hospital and its outpatient clinics are dedicated to the education of students in the multiple disciplines of the health fields and to the advancement of knowledge in the sciences and arts concerned with health and illness.

Specialist services at University Hospital are provided through the staff of the clinical departments of the School of Medicine.

There are also facilities and staff for clinical laboratory service, diagnostic and therapeutic X-ray services, and such special examinations as electrocardiography, cardiac catheterization, and electroencephalography. Emergency facilities are available at all times.

## Organizations

Graduates of the School of Medicine have a *School of Medicine Alumni Association* devoted to the interests of students and graduates and to the encouragement of scientific and professional progress among its members and the medical profession generally.

*Student American Medical Association.* This organization has a chapter among the students of this school. An Auxiliary provides opportunities for student wives to meet and work together.

*Student National Medical Association.* This organization has among its objectives assistance in the recruitment and retention of minority students.

## Lectureships

*Alumni Lectureship.* Annually some outstanding physician is brought to the WVU Medical Center under School of Medicine Alumni Association sponsorship to address the student body.

*Gideon Stanhope Dodds Lectureship.* A periodic lectureship, founded by a group of alumni and friends, honors Dr. Dodds, late professor emeritus of histology and embryology.

## Curriculum Plan

### First and Second Years

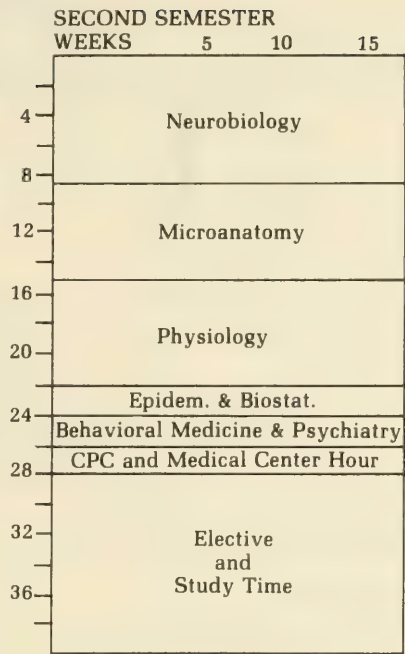
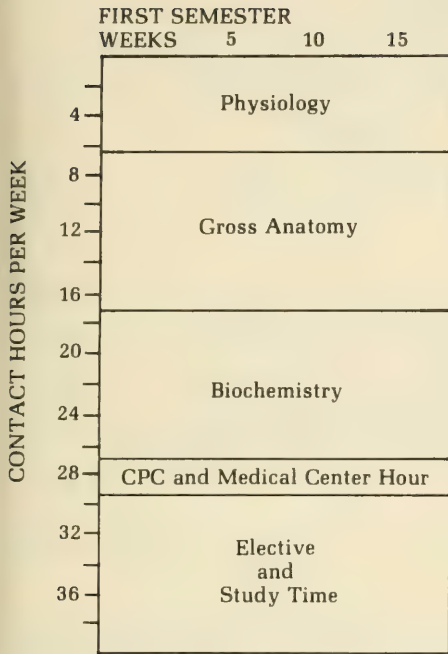
The plan of study is directed toward the principles and methodology of the medical basic sciences. However, the basic courses are designed so that the student begins to integrate concepts of patient care.

The student has the opportunity of an additional early exposure to patient-oriented instruction through the introduction to physical diagnosis and community medicine in the first term of the freshman year.

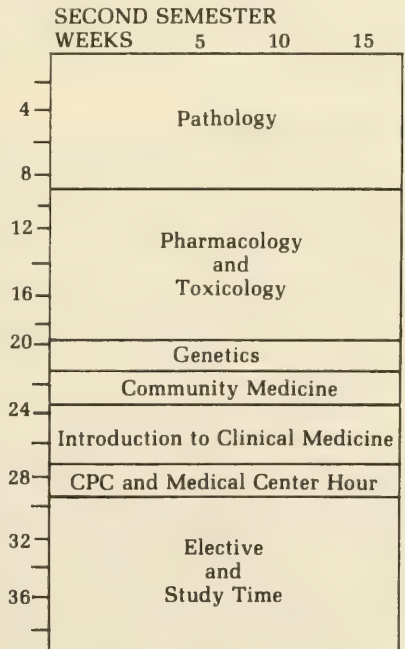
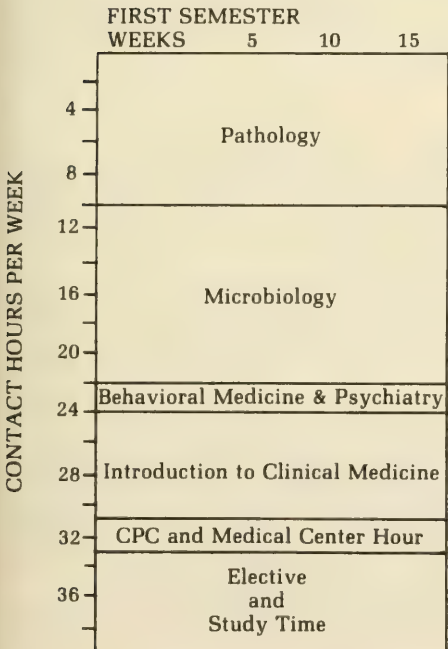
With the recognition that entering medical students have a wide variety of interests and backgrounds, elective opportunities are offered in the basic science years, beginning with the second term of the freshman year. The permissible elective courses or plans of study have broad limits and need not be confined to the Medical Center. The intention is to encourage responsible student initiative.

See Medicine I and Medicine II charts for representative schedules.

## MEDICINE I



## MEDICINE II





## MEDICINE III

### Clerkships

#### WEEKS

12	Medicine
12	Surgery
12	Behavioral Medicine and Psychiatry
	Obstetrics and Gynecology
12	Pediatrics
	Neurology, Pediatrics OPD, Acute Medicine
48	TOTAL

### Third Year

A tightly-structured traditional third year gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students will spend part or all of the year in specified clerkships at the Charleston Division of the WVU Medical Center or other affiliated programs as designated by the faculty of the School of Medicine.

### Fourth Year

The fourth year is selective. The student chooses one of three "tracks" and works with advisers at each tract to select the individual program. The general track is appropriate for: (1) the student pointing toward family practice, and (2) the student who has not selected a particular speciality interest.

The student chooses a specialty track by department, and may already recognize an attraction to a sub-specialty within that department. The research track offers opportunity to spend much of the fourth year in medical or biological research.

Sixteen of the 44 weeks must be spent in intramural programs. In addition to programs on the Morgantown campus, the programs at the Charleston Division—WVU Medical Center, qualify as intramural. A similar designation for specific programs is in development at the Wheeling Division—WVU School of Medicine and the Veterans Administration Hospital in Clarksburg. A folder is available that lists the approved intramural selective options.

A number of assigned fourth-year students will take all of their clerkships at the Charleston Division of the WVU Medical Center.

The Joint Council of Teaching Hospitals, working with physicians in various communities and the School of Medicine, has developed extramural

**MEDICINE IV**  
Three Alternative Tracks

WEEKS	GENERAL	SPECIALTY	RESEARCH
4	Vacation	Vacation	Vacation
12	Special Selective Advisory Group Concurrence	Special Selective Department Chairperson Concurrence	Special Selective Advisory Group Concurrence
8	Clinical Neuro Sciences, Behavioral Medicine and Psychiatry, Radiology Ob Gyn or Pathology Including Clinical Pathology	Department Chairperson Approval	Advisory Group Approval
8	Medicine and or Pediatrics, Including Sub Specialty Units		
8	Surgery, Including Sub Specialty Units		
4	Acute and Ambulatory Care		
44	TOTAL		

selective opportunities at a number of hospitals in West Virginia. Alternatively, the selectives may be spent at a university or university-affiliated hospital.

Every student has the opportunity for 4 weeks of vacation. The student may choose valuable medical experience for vacation time.

A separate booklet lists the extramural in-State electives and provides specific guidelines for the fourth-year curriculum.

## Courses of Instruction

### Anesthesiology (Anes.)

Professors Eller, Heironimus, Kennedy, Smith, and Knapp (Chairperson); Associate Professors Bettinger, Koliner, Martinez, Rodman, and Zimmerman; Assistant Professors David, Dedhia, de Sanctis, Doshi, Graf, Patrick, Poland, and Zavisca; Instructors Schiebel and Warren; Clinical Professors Cwik, Weeks, and Zeedick; Clinical Associate Professor Tercan; Clinical Assistant Professors Bellotte, Bergman, Chaldares, Hall, Hovis, Huber, Kessell, Larkin, Lilly, Mathew, Schienholtz, Rajaratnam, and Westmoreland; Clinical Instructors R. Chevuru and Thompson.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)

331. *Clinical Clerkship in Anesthesiology/Acute Medicine. (Third Year.)* CR.

A. *Lectures to Third-Year Students on Topics Related to Anesthesiology.*

B. *Clinical Clerkship in Acute Medicine.* Clinical clerks will receive instruction in preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology and toxicology, fluid and blood therapy, and pain management. Methods of instruction include seminars and practical exercises in emergency cardiac life support and clinical experience in the intensive care unit and the operating theatre. (Duration: 2 weeks.)

399. *Selective Experiences in Anesthesiology. (Fourth Year.)* CR. (See Conjoined Courses.)

A. *Clinical Anesthesiology.* Participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)

B. *Intensive and Respiratory Care.* Direct participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)

497. *Anesthesiology Research.* 1-15 hr. Participation in ongoing clinical laboratory projects including: The effects of benzodiazepine derivatives as premedicant, induction and amnesic agents for anesthesia; monitoring techniques in the critically ill; pathophysiology of the airway and lung; biochemical and ultra-structural studies of the metabolism of neurotransmitters from central and peripheral nerves; to learn research techniques; newer methods of physiological measurements in critically ill patients. Computer monitoring in intensive care. Duration: 4-24 weeks. Offered: By arrangement. Max. enrollment: 2.

### Behavioral Medicine and Psychiatry (B.M.)

Professors Carter, Flink, Hein, Kelley, Morgan, Morgan, Quarrick, Stevenson (Chairperson), Waldman, and Watne; Associate Professors Chelune, Colvin, Cone, Hlusko, Ingersoll, Kommor, Linton, Nelson, Pepper, Seime, and Walker; Research



Associate Professor Pawlicki; Assistant Professors Brailier, Claude, Clausell, Desai, Ellis, Fonte, Kelley, King, Koon, Lerfald, Miller, Orr, Roberts, and Robison; Research Assistant Professor Dahlquist; Instructor Nash; Adjunct Professor Levine; Adjunct Associate Professor Elkins; Adjunct Assistant Professor Hamilton; Adjunct Instructors Harmes, Kent, and Renick; Clinical Professors Ayd, Bateman, Carruth, Crawford, Marquis, Rossman, Schein, Staples, and Withersty; Clinical Associate Professors Callahan, Comer, Edelstein, Edwards, Goodman, Hibbard, Kerns, Knapp, Markham, Moriarty, Panepinto, Smith, Srebalus, Tinnin, Wanner, Ward, Weise, and Zarski; Clinical Assistant Professors Allen, Almond, Berler, Buck, Capage, Chambers, Collins, Davis, Dorsey, Dunning, Elder, Fawley, Fink, Hill, Hoback, Hutton, Inger, Kovacevich, Ledwell, McCluskey, McNeer, McSweeney, MacCallum, Morgan, Naviaux, Neilan, Panepinto, Pittman, Portz, Puzzuoli, Settle, Sine, Smith, Smith, Soule, Stein, Venjohn, Webb, and Williams; Clinical Instructors Goldberg, Hunter, and Starkey.

311. *Introductory Psychiatry. (First Year.)* 1 hr. Clinical syndromes with discussion of various patterns and defense mechanisms.
321. *Introductory Psychiatry. (Second Year.)* 2 hr. Developmental, interpersonal, and intrapsychic aspects of distorted behavior patterns.
341. *Clinical Clerkship in Psychiatry. (Third Year.)* CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry and participation in diagnosis and treatment of psychiatric disorders.
355. *Behavioral Science and Health Care.* Behavioral science applied to issues related to physical and mental health care. Variety of topics will be considered, such as study of interpersonal roles and games, various cultural "healing" practices, personal and social aspects of illness, family disorganization, and hospitals and related institutions.
399. *Selected Experiences in Behavioral Medicine and Psychiatry. (Fourth Year.)* (See Conjoined Courses.)

## **Community Medicine (C. Med.)**

Professors Pearson (*Chairperson*), Krall, and Mou; Clinical Professors Arnwine, Hansbarger, and Staples; Associate Professors Bosanac, Hall, and Smith; Clinical Associate Professors Cooley and Wiles; Adjunct Associate Professors Carlton, Holland, Merchant, and Reger; Assistant Professors Garland, Mukkamala, Murray, and Wyant; Clinical Assistant Professor Hinton; Adjunct Assistant Professors Attfield, Brough, Engelberg, Graham, Greenwood, and Harper; Instructor Medio; Clinical Instructors Lee, Patton, and Wagner; Adjunct Instructors Castellan and Kopczynski.

171. *Biostatistics for Health Sciences.* (For physical therapy, medical technology, nursing, or dental hygiene majors only.) I. 1 hr. PR: Stat. 101 or equiv. Application of basic concepts of probability and statistics to the health sciences.
311. *Methods of Biostatistics. I.* 3 hr. PR: Math. 3. Basic concepts of statistical models, distributions, probability, random variables, test of hypotheses, confidence intervals, regression, correlation, F and  $X^2$  distributions, analysis of variance with emphasis on methods of biostatistics. (Equiv. to Stat. 311.)
312. *Community Medicine. (Second Year.)* II. 2 hr. Open to limited number of graduate students. PR: Consent. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental and occupational factors. The organization of public health and medical care.
322. *Epidemiology and Biostatistics. (First Year.)* II. 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.

## Conjoined Courses (CC MD)

399. *Selective Experiences in Medicine. (Fourth Year.)* I, II, S. CR. PR: Satisfactory completion of first three years of the medical curriculum. (Graded as S or U.) The selective program offers a wide range of opportunities in the basic sciences, medical specialties, and sub-specialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the WVU Medical Center—Charleston Division, WVU School of Medicine—Wheeling Division, and the Veteran's Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans an individual program, with faculty advice. Flexibility is permitted. With consent of instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See the intramural and extramural brochure, published annually, describing the selective opportunities.)

## Family Practice

Professors Traubert (Chairperson), Carper, Pearson, and Vazquez; Professor Emeritus Sleeth; Associate Professor Weissner; Assistant Professors Arbogast, Cleavenger, Nesselroade, and Palmer; Clinical Professors Davis, Flood, Hall, Jackson, Jarrett, Simmons, and Tully; Clinical Associate Professors Brooks, Fullmer, Hess, Kellas, Mangus, Newman, Rashid, and Sinclair; Clinical Assistant Professors Clark, Crigger, Dickey, Eckmann, Graham, Hinton, Hofreuter, Lewis, McNeill, Merrifield, Patton, Reed, Ritz, Roberts, Sine, Stemple, and Warren; Clinical Instructors Bergman, Blum, Casto, Conley, Gais, Goodwin, Harris, Hayes, Hokanson, Jones, Peck, Saver, and Wack; Nurse Clinician Nath; Patient Educator Murray.

399. *Selected Experiences in Family Practice. (Fourth Year.)* (See Conjoined Courses.)

## Medicine (Med.)

Professor Emeritus Sleeth; Professors Waldman (Chairperson), M. Albrink, Andrews, Flink, Jain (Chief, Cardiology), J. Jones (Dean), Kluge (Chief, Infectious Diseases), Lapp (Chief, Pulmonary Diseases), McIntosh, Manier (Chief, Gastroenterology), Milutinovic (Chief, Nephrology), D. Z. Morgan (Associate Dean), E. Morgan, Mou (Dean, Charleston Division), Ortel, W. Point (Director of Medicine, Charleston Division), Raich (Chief, Hematology/Oncology), Shane (Chief, Endocrinology/Metabolism, Associate Chairperson), Stevenson (Chief, Behavioral Medicine), and Welton (Chief, Dermatology); Associate Professors Bekheit, Chideckel, Colvin, D'Alessandri (Chief, Comprehensive Medicine), DiBartolomeo (Chief, Rheumatology), Ganguly, Gaskins, Georgiev, Khakoo, Koller, Nelson, Renn, Rogers, Shultz (Chief of Medicine, Wheeling Division), Ullrich, and Walker; Adjunct Associate Professor Merchant; Assistant Professors Blessing, Brestel, Brick, Dedhia, Fisher, Fontana, Grubb, Heyman, Jubelirer, Kleinmann, Lempert, Martin, Morise, B. Nelson, O'Keefe, Orr, Peterson, Powers, Reimer, Robinson, Schroeder, Spital, Sweeney, and Thrush (Chief, Allergy and Clinical Immunology); Adjunct Assistant Professors Hodous and Storey; Instructor Blehschmidt; Adjunct Instructors Abrons, Bauer, Castellon, and Sepulveda; Clinical Professors Emeriti Blatchley, Johnson, Pushkin, and Tuckwiller; Clinical Professors Brodmerkel, Carter, Gaziano, Gregory, Lewis, McMillan, Marshall, Pfister, Reiter, Saville, Selinger, Skaggs, and S. Warren; Clinical Associate Professors Anderson, Artz, Avington, Chvasta, Conley, Gainer, Hall, Hartman, Jackson, Koppel, Latos, D. Lee, Lynch, McCabe, Nestman, Palmer, R. Point, Revercomb, Santer, Scobbo, Shafi, Valentine, and Zaldivar; Clinical Assistant Professors Arnett, Avashia, Basu, Byrd, Campbell, Condry, Cornwell, Duncan, Eskwith, Farmer, Gomez, Gustke, Harbaugh, Horsman, Houston, D. Jones, McConnell, McJunkin, MacCallum, Masilamani, Mazzocco, Noble, Parsons, Patel, Preville, Rectenwald, Rhudy, Vasquez, and C. Warren; Clinical Instructors Brown, A. Lee, Lim, McCagh, Pandya, Roidad, Saunders, and Spiggle.

321. *Physical Diagnosis—An Introduction to Clinical Medicine. (Second Year.)* Yr. 4-hr. PR: Consent. Examination of normal subjects. Practical experience in history-taking and physical examination of patients.
331. *Clinical Clerkship in Medicine. (Third Year.)* CR. Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the several departments. Clerkship in medicine occupies 12 weeks.
399. *Selected Experiences in Medicine. (Fourth Year.)* CR. (See Conjoined Courses.)

## **Neurological Surgery**

Professors Nugent (Chairperson), Fox, and Dunker.

399. *Selective Experiences in Neurological Surgery (Fourth Year.)* (See Conjoined Courses.)

## **Neurology (Neuro.)**

Professors Azzaro, Gutmann (Chairperson), Martin, and Schochet; Associate Professors Fakadej; Assistant Professors Brick, Carter, and Riggs; Clinical Professor Poffenbarger; Clinical Associate Professor Crosby; Clinical Assistant Professors Kettler, Loudon, Morgan, Pratt, and Swisher.

341. *Clinical Clerkship in Neurology. (Third Year.)* CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.
399. *Selected Experiences in Neurology. (Fourth Year.)* CR. (See Conjoined Courses.)

## **Obstetrics and Gynecology (Obst.)**

Professors Butcher, McIntosh, and Sehgal; Professor Emeritus Fugo; Associate Professors Cox (Chairperson), Durkin, Foss, and Granados; Assistant Professor Ashraf; Clinical Professors Bonney, Chambers, Giustini, and Patchell; Clinical Associate Professors Behnam, Grubb, Mairs, Maxson, Palladino, Poole, Stone, and Williams; Clinical Assistant Professors Athari, Battaglino, Berry, Curnutte, Georgiev, Jacobson, Keefer, McKinley, Park, Sandhu, and Withersty.

341. *Clinical Clerkship in Obstetrics and Gynecology.* (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students are involved with care of all patients, participating in an essential role in patient care. Experience extends to outpatient clinics in all aspects of obstetrics and gynecology.
399. *Selected Experiences in Obstetrics and Gynecology. (Fourth Year.)* An elective subinternship in obstetrics and gynecology with major responsibility for patient care beyond that provided during the third-year curriculum. Students participate in outpatient and inpatient care with delegation of responsibility commensurate with level of training and ability. Supervision is provided by house officers and faculty. Greater participation in surgical procedures is provided, as well as active participation in complicated obstetrical patients.



## **Ophthalmology (Ophthalm.)**

Professors Weinstein (*Chairperson*) and Colasanti; Clinical Professors Ryan and Trotter; Associate Professor Raju; Clinical Associate Professors Blaydes, Hamrick, Magee, O'Conner, Shepherd, and Winkler; Assistant Professors Raflo, Schwab, and Swanson; Clinical Assistant Professors Nugent, Pangilinan, Park, Rashid, Strauch, Strickland, and Toma; Clinical Instructors Genin, Linger, and McClure.

399. *Selected Experiences in Ophthalmology. (Fourth Year.)* (See Conjoined Courses.) Students are presented with the opportunity to acquire clinical skills in ophthalmology including techniques of eye examinations and certain aspects of emergency and elective treatment of eye disorders. There is close supervision by housestaff and members of the full-time ophthalmology faculty. Areas of special faculty interest include glaucoma, corneal diseases, retinal and vitreous diseases, and oculoplastic surgery. There are opportunities for students to participate in basic and clinical research. This experience occupies four weeks and can accommodate a maximum of 2 students and an additional student for a research project.

## **Orthopedic Surgery (Orth. Surg.)**

Professors Lempers and Radin (*Chairperson*); Professor Emeritus Pickett; Clinical Professor Wiley; Clinical Associate Professors Bowers and Davis; Assistant Professors Blaha, Jones, and Labosky; Clinical Assistant Professor Stoll.

399. *Selected Experiences in Orthopedic Surgery. (Fourth Year.)* (See Conjoined Courses.)

## **Otolaryngology (Otolaryn.)**

Professors Sprinkle (*Chairperson*), Cody, and Veltri; Associate Clinical Professors Hall and Morgan; Clinical Associate Professors Bryant, Cather, Haislip, Hatfield, Jaquiss, Kamerer, Lim, Malone, Mathias, Oliverio, Paine, Spencer, and Whitaker; Assistant Professor Anderson; Clinical Assistant Professors Azar, Bland, Cipic, Dodd, Holt, Nichols, Renick, Snider, Sporck, Touma, Wade, and Wilkinson; Clinical Instructors Curiel, Fitzpatrick, and Lanham.

399. *Selected Experiences in Otolaryngology. (Fourth Year.)* (See Conjoined Courses.)

## **Pediatrics (Pedia.)**

Professors Klingberg (*Chairperson*), B. Jones (*Associate Chairperson*), Kelley, Neal (*Chairperson, Pediatric Cardiology*), and Pomerance; Associate Professors Amato, S. Edwards, Fakadej, Mullett, Phillips, Ross, Wuori, and Wible; Assistant Professors Anderson, Howland, and Myerberg; Instructor Sutherland; Clinical Professors Hansbarger, Harrison, Jakubec, Potterfield, and Stabins; Clinical Associate Professors Ayoubi, Burech, Holyman-Ayoubi, Israel, Leslie, Lewine, Morris, and Shawkey; Clinical Assistant Professors Carlson, Kumar, Lambrechts, Lawrence, Morgan, Previll, Rhee, Staab, Szego, Verma, and Wolf; Clinical Instructors Grijalva, Iskander, Majumder, Mossahebi, and Uy.

331. *Clinical Clerkship in Pediatrics. (Third Year.)* CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.

370. *Genetics. (Second Year.)* Introduction to the understanding of genetics and heritable diseases in man.

399. *Selected Experiences in Pediatrics. (Fourth Year.)* (See Conjoined Courses.)

## **Radiology (Radiol.)**

Professors Gabriele (*Chairperson*) and Frich; Associate Professors Elyaderani, Horton, Lai, and Shohadai; Assistant Professors Chang, Chen, Goodwin, Hagler, Jain, Kim, and Tehranzadeh; Clinical Professors Butler, Castro, and Kennard; Clinical



Associate Professors Antico, Arbitman, Barger, Ellswood, Goodwin, Haslem, Hogan, Sexton, Szalontay, and Wilder; Clinical Assistant Professors Abdalla, Cossrow, Dillow, Hayes, Hetzer, Hung, Kalinowski, King, Ko, Koh, Kunst, Leef, Nagarajan, Noble, Patterson, Rosenblatt, Smith, Stupar, Tanguilig, Wheatly, Williams, Wymer, and Yost.

The radiology staff aids in the instruction of students at all levels of the curriculum. They assist in the teaching of topographic anatomy in the first year. The careful interpretation of roentgenograms is an integral part of each clinical service.

101. *Radiology*. Selected experiences in general radiology.
102. *Neuroradiology*. Review of neuroanatomy with respect to application in neuroradiology. Selected experiences in neuroradiology.
103. *Cardiovascular Radiology*. Review of anatomy and embryology. Selected experiences in central and peripheral vascular radiology.
104. *Radiologic Physics*. Application of physics and mathematics to radiology, nuclear medicine, and radiation therapy.
399. *Selected Experiences in Radiology*. (Fourth Year.) CR (See Conjoined Courses.)

## **Surgery (Surg.)**

Professors Watne (Chairperson), Boland, Moran, Tarnay, Warden, and Zimmermann; Clinical Professors Bradford (Emeritus), Easley (Emeritus), Gilmore, Gray, Hershey (Emeritus), McConnell, Mendoza, O'Dell, Trenton, and Walker; Associate Professors Hrabovsky, McDowell, and Savrin; Clinical Associate Professors Bock, Charbonniez, Gaphery, Glass, Kappel, J. Khan, M. Khan, King, Lawton, Leadbetter, Linger, MacDonald, Markey, Rahbar, Schaefer, Shabb, Surmonte, Thorngate, Velasquez, and Voss; Assistant Professors Farrell, Foshag, Grant, Kusminsky, and Veach; Clinical Assistant Professors Aburahma, Al-Hajj, Boustany, Dickey, Dickinson, Fedde, Figueroa, Fogarty, Graber, Griswold, Heiskell, Johnson, Kim, Kress, Lee, Mantz, B. Page, J. Page, Polack, Reed, Susan, and Trammell; Instructors Evans, Manetta, Swanson, Wiseman, and Zekan; Clinical Instructors Foster, Patel, Rashid, Strauch, and Thrush.

341. *Clinical Clerkship in Surgery*. (Third Year.) CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of house staff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.
399. *Selected Experiences in Surgery*. (Fourth Year.) (See Conjoined Courses.)

## **Urology (Urol.)**

Professors Kandzari and Milam (Chairperson); Associate Professor Belis; Clinical Professor Summers; Clinical Associate Professors Lane, McCoy, McCuskey, and Trapp; Clinical Assistant Professors Celis, Durig, Franz, Lee, Lindert, Naranjo, Ravitz, Serrato, Shannon, and Stoughton; Clinical Instructors Faddoul, Kassiss, and McClellan.

399. *Selective Experiences in Urology*. (Fourth Year.) (See Conjoined Courses.)

# **Medical Technology**

## **Undergraduate Program**

The undergraduate program in medical technology is under the administration of the School of Medicine. Students are admitted into the program leading to a bachelor of science degree after the completion of two years of premedical technology in an accredited college or university. The WVU Medical Technology Program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and by the National Certification Agency for Medical Laboratory Personnel (NCA).

The undergraduate curriculum includes the premedical technology program, which is offered in the WVU College of Arts and Sciences and at Potomac State College in Keyser and the medical technology program which is offered in the School of Medicine.

Courses of the first two years (premedical technology) may be taken in any institution of recognized standing that offers the courses required for admission into the medical technology program.

Since the course of study of the last two years is of a professional nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses which introduce the student to the medical sciences and courses which prepare the student for the work of the senior year. During the senior year (the second year in the medical technology program) the student receives both didactic instruction and practical experience in the University Hospital laboratories.

### **Aim and Purposes**

The primary aim of the program in medical technology at WVU is to provide a strong undergraduate educational program in medical technology which leads to a bachelor of science degree and which provides an educational background compatible with the demands placed upon the medical technologist by the ongoing technologic revolution in laboratory medicine.

The purposes are: (1) to provide a program in medical technology which meets the academic standards of the University; (2) to provide graduate medical technologists for clinical, public health, and research laboratories; (3) to provide an educational background which enables graduates to prepare for teaching and supervisory positions in medical technology; and (4) to provide an educational background acceptable for graduate work in the medical sciences.

A program for certified medical technologists, who desire to complete requirements for a Bachelor of Science degree is available. (Further information may be obtained by contacting the Medical Technology Programs Office.)

### **Admission**

Application for admission into the junior year (first year in the undergraduate medical technology program) should be made before the beginning of the second semester of the sophomore year in college. *Students at*

WVU or Potomac State College are not transferred automatically from the preprofessional course (first two years) to the professional course (third and fourth years.) Students are selectively admitted to the program for their final two years of work.

Application forms for admission to the professional course are available after December 1 from the office of the Assistant to the Dean of Admissions and Records, Medical Center. These forms should be completed and returned to that office no later than February 1, if the student expects to enter the succeeding first semester classes.

Admission to the third year is on the recommendation of the Admissions Committee to the Dean. A personal interview with the Committee is required. A minimum grade-point average (over-all and science) of 2.0 is required for admission.

### Admission Requirements

Complete information concerning WVU admission, fees and costs, registration, regulations, etc., may be found in the *WVU Undergraduate Catalog*, College of Arts and Sciences section.

(a) Admission requirements for the first year (premedical technology) are those for the College of Arts and Sciences.

(b) Admission to the third year (first year of the medical technology program) is based upon two years of college work with a total of 64 hours as follows:

*English.* 6 hours. (Composition and rhetoric.)

*Biological Science.* 8 hours. (General biology or general zoology.)

*Chemistry.* 15-16 hours. (Inorganic chemistry, 8 hours; quantitative analysis, 3-4 hours; organic chemistry, 4 hours.) (Transfer students are required to have a complete course in organic chemistry to include aliphatic and aromatic compounds.)

*Physics.* 8 hours.

*General Physical Education.* 2 hours. (University requirements for students taking first two years in residence.)

*Mathematics.* 3 hours. (College algebra is the minimal course requirement.)

Electives to complete the required hours and to meet WVU Core Curriculum requirements.

Courses such as bacteriology, parasitology, and anatomy should not be taken until after the completion of the sophomore year. A foreign language is recommended for students who plan to do graduate work.

### CURRICULUM PLAN Premedical Technology

First Year			
First Semester	Hr.	Second Semester	Hr.
Chem. 15—Inorganic .....	4	Chem. 16—Inorganic .....	4
Elective* .....	3	Engl. 1—Comp. & Rhet. ....	3
Math. 3 .....	3	Elective* .....	3
Biol. 1 .....	4	Biol. 2 .....	4
G.P.E. 1 .....	1	G.P.E. 2 .....	1
M. Tec. 1** .....	1	M. Tec. 2** .....	1
	16		16

## Second Year

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
Chem. 115—Quantitative.....	4	Chem. 131—Organic .....	4
Electives* .....	6-7	Electives* .....	6-9
Phys. 1.....	4	Phys. 2.....	4
Engl. 2—Comp. & Rhet. ....	3		
	<u>17-18</u>		<u>14-17</u>

## Medical Technology

### Third Year (Medical Technology I)

<i>First Semester</i>	<i>Hr.</i>	<i>Second Semester</i>	<i>Hr.</i>
M. Tec. 100.....	4	Parasitol. 224.....	4
Bioch. 139.....	5	M. Bio. 223.....	5
Physi. 241.....	4	Bioch. 239.....	4
Elective .....	3	M. Tec. 101.....	4
	<u>16</u>		<u>17</u>

### Fourth Year (Medical Technology II)

Students receive didactic and clinical instruction in the University Hospital laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. Students may be required to be "on duty" at irregular hours due to the professional nature of the collegiate program. Likewise, if the student has excessive absences during the senior year, the time loss must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	<i>Hr.</i>
M. Tec. 200—Orientation.....	No Credit
M. Tec. 220—Immunohematology and Blood Banking .....	2
M. Tec. 221—Immunohematology and Blood Banking Laboratory.....	5
M. Tec. 230—Clinical Chemistry .....	2
M. Tec. 231—Clinical Chemistry Laboratory .....	5
M. Tec. 240—Clinical Hematology .....	2
M. Tec. 241—Clinical Hematology Laboratory .....	5
M. Tec. 250—Clinical Microbiology .....	2
M. Tec. 251—Clinical Microbiology Laboratory.....	5
M. Tec. 260—Instrumentation .....	2
M. Tec. 265—Laboratory Management .....	2
M. Tec. 270—Clinical Microscopy .....	2
M. Tec. 275—Clinical Histopathology .....	2
M. Tec. 280—Clinical Immunology .....	2
M. Tec. 290—Scientific Research and Writing .....	1-4

42

---

\*Electives from Group A and Group B are to be selected to meet University Core Curriculum requirements.

\*\*M. Tec. 1 and 2 are not required subjects. It is highly recommended that all students take these courses. M. Tec. 3 may be taken if electives are completed in the sophomore year.



## Degree

The degree of Bachelor of Science in Medical Technology is granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Graduate Program

The WVU Medical Technology graduate program prepares graduate medical technologists for positions either as administrators and teachers in medical technology educational programs, or as supervisors in special areas of the clinical laboratory. The primary objective is to assist in development of knowledge in an area in administration, in education, or a special area of interest selected by the student which may be a special medical laboratory science as the specific area applies to laboratory medicine. Specializations include clinical chemistry, clinical microbiology, hematology, and immunohematology. The specific course work requirements for the master of science degree rests with the graduate adviser in the student's specific area of interest.

*Graduate Committee:* Professors B. Love, H. Mengoli, D. Moore, Jr., N. Rodman, and S. Jagannathan.

## Admission

Applicants must have a baccalaureate degree in medical technology from an accredited institution or a baccalaureate degree in an allied field and be a certified medical technologist with an acceptable certifying agency.

The area of concentration in medical technology desired by the student is considered in the evaluation of the undergraduate record as follows:

1. Individuals who desire to do special study in clinical chemistry, hematology, or immunohematology must have completed a minimum of 8 hours of physics, 3 hours of mathematics, 4 hours of organic chemistry, and 4 hours of quantitative chemistry on the college level.

2. Individuals who desire to do special study in microbiology must have completed 4 hours of organic chemistry and 16 hours of biological sciences.

3. A minimum of one year's experience in a clinical laboratory is required for admission.

Students will be required to make up deficiencies in the above, as well as other deficiencies deemed necessary by the adviser.

Applicants must have a minimum undergraduate grade-point average of 2.5 (based on A = 4.0 grade points) for admission.

All applicants to the graduate program are required to take the general aptitude part of the Graduate Record Examination. Results should be sent to the Medical Technology Programs Office, West Virginia University.

Two letters of reference must be on file in the Medical Technology office. One letter should be from the major adviser in the undergraduate college and another from the immediate supervisor of the applicant's present position. An interview will be requested for all applicants who meet the requirements for admission.

Applicants are selected for admission on the basis of scholastic standing, recommendations, and interest in the field of medical technology. The number of applicants accepted is necessarily limited by the available facilities; and in general, applicants with the most experience are considered first.

## Application Procedure

A preliminary application is filed in the Medical Technology office. Letters of recommendation are sent to the Medical Technology Programs Office.

After approval of the preliminary application, the admission procedure is the same as for other programs in the WVU Graduate School.

A personal interview may be required before final admission to the program. This interview will give the graduate student an opportunity to evaluate the program and to determine if the program will offer the educational opportunities which the student desires.

## Course of Study

It is expected that the students who enter the graduate program in Medical Technology will have a goal in mind and a special field of interest in medical technology. The program is tailored to the needs of the student as far as possible. A minimum of 36 semester hours of credit including a research problem is required. The student selects a major area of concentration from either education, supervision, or administration, and a minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunohematology.

A minimum of 12 semester hours of course work in education to include the following is required of all students:

(A). The three following courses are required:

Ed. P. 320—Introduction to Research .....	3 hr.
Ed. P. 330—Advanced Education Measurements .....	3 hr.
Ed. F. 320—Philosophic Systems and Education .....	3 hr.

(B). The student selects one of the following:

Hl. Ed. 305—Philosophy of Health Education .....	3 hr.
Ed. P. 260—Instructional Media and Technology .....	3 hr.
Ed. P. 360 or 361—Instructional Systems .....	3 hr.
Ed. P. 450—Psychological Foundations of Learning .....	3 hr.
Ed. P. 451—Principles of Instruction .....	3 hr.
Ed. A. 330—Principles of Education Leadership .....	3 hr.
Ed. A. 331—Principles of Supervision .....	3 hr.
Ed. F. 300—Sociology of Education .....	3 hr.

(C). Ed. P. 311 (Statistical Methods), Stat. 311 (Statistical Methods), or C. Med. 311 (Biostatistics), is strongly recommended.

Other courses to complete 36 semester hours are selected by the student (with the help of the adviser) in the area of concentration selected by the student. Students may select courses in departments in schools other than the School of Medicine.

All students must complete a minimum of 18 semester hours in a science related to medical technology including Seminar (3 hr.) and Problem Study (6 hr.).

All students must rotate for orientation purposes through all sections of the University Hospital Clinical Laboratories to include microbiology, hematology, chemistry, immunohematology, and histopathology for a minimum of two days in each laboratory or a total of ten days.

In addition, at the discretion of the student's adviser, other requirements in teaching, supervision, and administration may be necessary.

The adviser works out with the student a plan of study for the entire graduate program. This plan is usually made at the end of the first semester of the student's graduate study. A copy of this "plan of study" is signed by the adviser and student and sent to the Medical Technology Office to be put in the student's file.

### **Examinations**

A final written comprehensive examination in the major and minor interest areas is given approximately one month before the date on which the degree is to be awarded.

An oral defense of the problem is given one month after submission of the Problem Study in its final form to the Graduate Committee.

### **Requirements for Degree**

All requirements for the master of science degree, as outlined in the WVU *Graduate School Catalog*, must be fulfilled. These requirements can be fulfilled in three semesters of full-time work, but ordinarily at least four semesters are required for completion of the degree requirements.

Degree candidates must have a 3.0 grade-point average and must have removed all incomplete grades and deficiencies.

All students must complete a problem study (see M. Tec. 497).

### **Registration Requirement**

Owing to the limit on the number of students who can be enrolled in the graduate program in medical technology, all students (part-time and full-time) must enroll each semester to continue in the program.

### **Medical Technology (M. Tec.)**

1. *Orientation to Medical Technology*. I, II. 1 hr. Principles and practices of medical technology and the role of the medical technologist as a member of the health team.
2. *Orientation to Medical Technology*. II. 1 hr. Continuation of work of M. Tec. 1.
3. *Introduction to Medical Laboratory Technology*. I. 3 hr. Introduces the procedures used in the clinical laboratory and demonstrates their relationship to health and disease.
100. *Medical Technology*. I. 4 hr. Gross and microscopic structure of human body as it applies to the practice of medical laboratory technology.
101. *Medical Technology*. II. 4 hr. PR: Acceptance into the medical technology program as a first-year student, or consent. Continuation of M. Tec. 100.
200. *Orientation*. S. No credit (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics.
220. *Immunohematology and Blood Banking*. I, II. 2 hr. PR: Senior standing, or consent. Lectures on immunohematology and blood banking theory and practice.
221. *Immunohematology and Blood Banking Laboratory*. Arranged. 5 hr. PR: Senior standing, or consent. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.
230. *Clinical Chemistry*. I, II. 2 hr. PR: Senior standing, or consent. Lectures on principles of clinical chemistry procedures; their clinical significance and implication in diagnosis.

231. *Clinical Chemistry Laboratory*. Arranged. 5 hr. PR: Senior standing, or consent. Practice in the clinical chemistry laboratory.
240. *Clinical Hematology*. I, II, S. 2 hr. PR: Senior standing, or consent. Lectures in hematologic theory and practice.
241. *Clinical Hematology Laboratory*. Arranged. 5 hr. PR: Senior standing, or consent. Application of hematological principles to laboratory medicine. Emphasis on routine and specialized procedures, evaluation and problem solving.
250. *Clinical Microbiology*. I, II. 2 hr. PR: Senior standing, or consent. Presentation and discussion of current methodology employed in the processing of clinical microbiology specimens, isolation and identification of pathogenic microorganisms, and determination of antimicrobial sensitivities.
251. *Clinical Microbiology Laboratory*. Arranged. 5 hr. PR: Senior standing, or consent. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms; processing of specimens and antibiograms. Includes experiences in pathogenic mycology and parasitology.
260. *Instrumentation*. I, II, S. 2 hr. PR: Senior standing, or consent. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.
265. *Laboratory Management*. I, II. 2 hr. PR: Senior standing, or consent. Laboratory organization, economics, ethics, and records.
270. *Clinical Microscopy*. I, II, S. 2 hr. PR: Senior standing, or consent. Lectures and laboratory practice in urinalysis, gastric analysis, pregnancy tests, and other procedures.
275. *Clinical Histopathology*. I, II, S. 2 hr. PR: Senior standing, or consent. Lectures and laboratory practice in preparation of human tissues and organs for gross and microscopic examination.
280. *Clinical Immunology*. I, II, S. 2 hr. PR: Senior standing, or consent. Lectures and laboratory practice in the principles of clinical immunology and their relationship to clinical laboratory technology.
290. *Scientific Research and Writing*. I, II. 1-4 hr. PR: Senior standing, or consent. Conducting a scientific research project in medical technology and writing a scientific article for publication. Oral presentations are included.
300. *Seminar*. I, II, S. 1 hr. Seminars include topics in laboratory management and education in medical technology, and timely topics. Minimum of 3 semester hours to include all three topics is required of all graduate students in the medical technology program.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration. This study is reported in a thesis-style manuscript. For this study and report, the student registers in M. Tec. 497. Total number of hours earned in M. Tec. 497 is determined by the student's adviser. As many as 9 semester hours may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M. Tec. 497 will be counted toward fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.



## **Division of Physical Therapy**

The Division of Physical Therapy, under the auspices of the School of Medicine, offers the final two years of a baccalaureate program leading to a degree in physical therapy.

The first two years of study may be completed in the College of Arts and Sciences of WVU, or any other accredited institution which offers courses comparable to the admission requirements of the Division of Physical Therapy. To be eligible for a degree a student must complete the final two years of the curriculum at WVU.

Admission to the third year is based upon 62 or more credit hours of study which satisfies the University Core Curriculum requirements and the prerequisites, or their equivalent, of the Division of Physical Therapy. *Registration in the first two years does not automatically assure the student a place in the junior class. A student will be accepted on a competitive basis and selection will be based on scholastic standing and on those personal characteristics which are desirable in physical therapists.*

The student must satisfactorily complete a three-month period of clinical internship before the awarding of the baccalaureate degree. A Certificate of Proficiency in Physical Therapy then will be awarded which entitles the graduate to seek membership in the American Physical Therapy Association and to become eligible for state licensure for the practice of physical therapy. (A physical therapist can practice professionally only after having passed the state board examination in the state where employment is desired.)

## **Admission to the Professional Program**

A personal interview with the Admissions Committee is required. Only those students who have at least a 2.6 grade-point average and a 2.75 science average (on a 4.0 scale) and who will have completed all the prerequisites of the Division of Physical Therapy by the current spring semester will be interviewed. Individuals who do not meet these requirements but who believe extenuating circumstances justify admission may petition the Admissions Committee for an interview. Reasons why the application should receive special consideration should be clearly stated in the petition. The Admissions Committee will advise the applicant of the time and place of the interview.

Official enrollment forms are available at the office of the Assistant to Dean, Admissions and Records, Medical Center, beginning December 1 of each year. Application forms should be returned no later than March 1 in the year admission is desired.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.*

The Admissions Committee will advise the applicant of the time and place of the interview.

## **Academic Standards**

### **Clinical Education Program**

Students must satisfactorily complete the pre-internship clinical education program. During this time students will be expected to defray any and all costs of the program. The Clinical Internship Program is an 18-week

program and is scheduled following the end of the last semester of the senior year. Before the student is allowed to leave for clinical internships the student must: (1) have completed *all* academic requirements of the program satisfactorily; (2) be of good health and have a full health insurance policy which will be in effect the entire 18 weeks of internship; (3) have an active professional liability insurance policy; (4) be prepared to defray the following types of costs: tuition, travel, room and board, and any incidental cost.

## Promotions and Suspensions

Physical therapy students must register for all prescribed courses for each semester, except by special permission from the Academic Standards Committee of the Division. Permission for repetition of work may be granted only by the Academic Standards Committee.

1. No student will be permitted to register for any work of second year until all courses for the preceding year have been completed successfully.

2. If in the opinion of the faculty that work completed in any unit of a course indicates that a student has a serious lack of understanding of that unit a grade of "I" (incomplete) will be submitted for that student. This may occur even though the student has an acceptable average of all units for the course. It is the student's responsibility to consult with the instructor about the means and schedule for removing incomplete grades.

3. A student who does not assume the responsibility for removing incomplete grades, or who fails to do so in a satisfactory manner, will be given an "F" for the course and will not be permitted to register for advanced courses.

4. No student will be permitted to register for clinical internships (Ph.Th. 290) until all other courses have been satisfactorily completed.

5. Notwithstanding the above rules, a student whose performance has been considered unsatisfactory by the Academic Standards Committee may be required, as a condition for advancement or graduation, to complete special requirements and/or an extended period of study. Such a requirement or special opportunity may be made available at the discretion of the Academic Standards Committee. In addition, the Division of Physical Therapy reserves the right to suspend any student who does not perform at an overall level considered satisfactory for patient care.

6. A student who has been suspended may apply to the Admissions Committee of the Division of Physical Therapy for readmission.

## Curriculum Plan

This curriculum is designed to satisfy the course requirements for admission to the professional portion of the curriculum in Physical Therapy offered by the School of Medicine. The Core Curriculum requirements must be satisfied, and a total of 62 hours is required for admission to the first professional year. This suggested curriculum plan allows latitude in career choice and is basically compatible with various curricula in the arts and sciences.

### First Year

First Semester	Hr.	Second Semester	Hr.
Psych. 1**	3	Engl. 1	3
Chem. 15**	4	Chem. 16**	4
Biol. 1**	4	Biol. 2**	1
Electives*	6	Electives*	6
	<u>17</u>		<u>17</u>

### Second Year

First Semester	Hr.	Second Semester	Hr.
Engl. 2	3	Psych. Elect.**	3
Psych. 141**	3	Phys. 2**	4
Stat. 101**	3	G.P.E. 2	1
Phys. 1**	3	Electives*	9
G.P.E. 1	1		
Electives*	3		
	<u>17</u>		<u>17</u>

### Third Year

First Semester	Hr.	Second Semester	Hr.
Path. 128	2	Anat. 102	3
Anat. 101	4	Anat. 208	2
Anat. 103	2	Ph. Th. 110	3
Physi. 241	4	Ph. Th. 112	3
Ph. Th. 111	5	Ph. Th. 114	2
Ph. Th. 117	1	Ph. Th. 116	1
	<u>1</u>	Ph. Th. 118	3
	18		<u>17</u>

### Fourth Year

First Semester	Hr.	Second Semester	Hr.
Ph. Th. 271	4	Ph. Th. 270	3
Ph. Th. 273	3	Ph. Th. 272	2
Ph. Th. 275	3	Ph. Th. 274	4
Ph. Th. 277	3	Ph. Th. 276	3
Ph. Th. 279	4	Ph. Th. 278	5
Ph. Th. 281	1	Ph. Th. 282	1
	<u>18</u>		<u>18</u>

### Summer

	Hr.
Ph. Th. 290	3-6

\*Electives: Students are required to satisfy University Core Curriculum requirements. In addition, these electives are suggested: Nutr. 71; Biol. 166; Psych. 164, 242, 243, 245, 281, 282; Math. 4; Spch. 11, 106, 221.

\*\*Courses required for admission to Division of Physical Therapy.

## Courses of Instruction in Physical Therapy (Ph. Th.)

Professor Burkart (*Director*); Associate Professors Barnes, Petronis, and Weaver; Assistant Professors Hart and Meacci; Instructor Harris.

(Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section.)

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal and neuromuscular systems including biomechanics, principles of movement, and analysis of muscle and joint action. Abnormal function due to physical disabilities and pathological disturbances. Students study normal human development and maturation through laboratory sessions involving evaluation and observation of children ranging in age from newborn to 5 years.
111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. PR: Biol. 1, 2; Chem. 15, 16. Lecture-laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy orientation to theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.
112. *Pulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, pathology, and treatment of pulmonary conditions. Laboratory in pulmonary evaluations and respiratory treatment procedures. Lectures and case presentations in medicine and surgery concerning chest and thoracic conditions.
114. *Medicine and Neurology*. II. 3 hr. PR: Ph. Th. 111. Lectures and case presentations in medicine including GI, hematology, endocrinology, dermatology, physiology of aging, and infectious diseases. Orientation to neurology and neurological disorders.
116. *Clinical Education I*. II. 1 hr. (Graded Pass-Fail only.) The physical therapy department, equipment, and procedures. Students observe patient treatment by experienced therapists and perform basic treatment procedures under direct supervision.
117. *Seminar*. I. 1 hr. PR: Ph. Th. 111. Investigation of selected problems and issues.
118. *Basic Therapeutic Exercise*. II. 3 hr. This course includes the application of principles and techniques of traditional forms of anaerobic and aerobic exercises and goniometry. Isotonic, isometric, and isokinetic exercises are presented with an emphasis on the understanding of human cardiopulmonary functions under the stress of motor activity. Laboratory work in the application of basic exercises and pertinent cardiopulmonary stress tests is included.
270. *Organization and Management*. II. 4 hr. PR: Ph. Th. 275, 281. Basic principles and philosophy of management and the organization with emphasis on styles of leadership, group dynamics, theories of motivation, delegation of responsibility and authority, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.
271. *Electrotherapy and Electromyography*. I. 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures. Basic principles and actual clinical experience with patients offered in electromyography, including nerve conduction and needle insertion studies.
272. *Professional and Community Relationships*. II. 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation*. I. 4 hr. PR: Ph. Th. 110, 118. Principles and techniques of performing evaluation testing procedures within the scope of the physical therapist, including manual muscle testing, neurological, ADL, and basic orthopedic evaluations.
274. *Orthopedic Physical Therapy*. II. 3 hr. PR: Ph. Th. 110, 118, 273. Selected lectures and cases in orthopedics. Emphasis on effects and treatment of disease and injury to musculoskeletal and neuromuscular systems. Laboratory practice in orthopedic assessment and procedures, including mobilization techniques.



275. *Professional Literature and Research*. I. 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study*. II. 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in the allotted time.
277. *Clinical Teaching*. I. 2 hr. PR: Ph. Th. 273. Emphasis on the physical therapist as a teacher. Students develop skill and techniques in the facilitation of learning, objective writing, and evaluation in both clinic and didactic settings.
278. *Correlative Rehabilitation*. II. 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise*. I. 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and functional anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise and methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.
281. *Clinical Education II*. I. 1 hr. (Graded Pass-Fail only.) Continuation of Ph. Th. 116. The student's participation in treatment programs is increased and enlarged to include rehabilitation techniques and basic testing and evaluation procedures.
282. *Clinical Education III*. II. 1 hr. (Graded Pass-Fail only.) Supervised experience in more specialized procedures and testing techniques and inpatient program design.
290. *Clinical Education IV*. S. 1-12 hr. (Graded Pass-Fail only.) Three summer affiliations of six weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health.

## School of Nursing

Nursing shares with other disciplines the overall purpose of the health care system in assisting clients to attain, regain, and retain optimal health. Specifically, the purpose of nursing is to assist clients wherever they are, in the performance of those activities contributing to optimal health (or a peaceful death) the clients would normally initiate and perform unaided if they had the necessary strength, knowledge, and motivation.

The practice of nursing embodies a holistic concept of man. This concept is derived from a synthesis of general education and nursing education. General education is that component of learning derived from the whole of knowledge and truth that is not specialized or particular to any field but which supports many fields. It provides the individual with basis for moral grounding, with a knowledge of man and the universe, a basis for understanding of self and others, as well as an appreciation of the past, an understanding of the present, and the process for predicting the future. These primary concepts form a foundation for subsequent learning in the applied discipline of nursing. Nursing education is that process by which the nurse continually synthesizes the conceptual base, while developing and applying one's intellectual, interpersonal, and technical skills in assisting individuals, families, and communities to meet their health needs. This process unifies practice, teaching, and research in the advancement of nursing.

The faculty believes that man is a physiological, psychological, social and spiritual being, capable of rational thought and action. Throughout the life span, one progresses through developmental stages and continually strives to meet basic human needs in a uniquely patterned way. Within the context of socio-cultural backgrounds, individuals perceive and respond to stimuli as integrated wholes. Individuals maintain basic human integrity through the process of dynamic continuous interaction with their internal and external environment.

Man is a member of innumerable systems within a total society which is organized to meet client recognized needs, with the family being the primary system for meeting health needs. Society organizes health care systems to assist the family in meeting the health needs of its members. Each person has the right of access to those resources which will assist in attaining and maintaining optimal states of health.

Health is a dynamic state which constantly fluctuates among varying degrees of wellness and illness. Health states embody physiological, psychological, social, and spiritual dimensions. The optimal state of health which can be attained and maintained is unknown but is influenced by genetic endowment, the environment in which individuals live, and their ability to cope with actual and potential stresses.

The faculty believes learning is a life-long process, enhanced by a climate of personal acceptance of the learner as an integrated being with internal motivation, attributes, dignity, and worth. Learning is a progressive and cumulative experience resulting in changed behavior which becomes useful in subsequent learning situations.

The teaching/learning process includes opportunities for teacher-student interaction in setting goals, selecting and evaluating learning experiences, and in appraising instructional methods and student progress. The process of education takes place in an atmosphere characterized by a democratic spirit in which student and faculty can share learning experiences. This climate encourages the development of intellectual curiosity, systematic inquiry, the capacity for self-direction, and a sense of commitment to continued learning. Through this educative process, faculty and students continue to develop as informed persons responsible for contributing to the improvement of the profession and society through on-going creative efforts.

Undergraduate education in nursing prepares persons capable of beginning professional nursing practice and provides foundation for graduate education in nursing. Upon completion of the baccalaureate curriculum, the nurse can practice in a variety of settings and with clients of various developmental levels. The graduate uses process skills to maintain, restore, or improve health states of clients, and uses leadership theory to effect change. The baccalaureate graduate uses a conceptual base to evaluate and modify nursing role in relationship to client needs and expectations, and is prepared to support efforts in expanding nursing knowledge.

Graduate education in nursing prepares clinicians capable of leadership in developing and expanding nursing knowledge, skills, and practice competencies in light of societal needs. Preparation at the master's level provides the opportunity for the student to demonstrate self-direction and effective interactions with other health professionals in improving nursing practice and the health care delivery system. The master's graduate is able to provide quality health care in a variety of settings while clarifying and redefining nursing roles.

## Admission

To qualify for admission to the School of Nursing basic program a candidate must have completed one year of prescribed courses in an accredited college or university. Applicants are eligible for review by the Admissions Committee after completion of one full semester of course work in an accredited college or university. The prescribed courses include subjects such as: Chemistry, 8 hours; English Composition, 3 hours; Sociology, 3 hours; Psychology, 3 hours; Nutrition, 3 hours; Life-Span/Growth and Development, 3 hours; Core subjects, General Physical Education, and/or electives.

A dominant factor in the number of students admitted is the limitation of space. Currently, the maximum number of basic students which can be accommodated is 72. *Since West Virginia University is a state university, and since the number of qualified applicants exceeds the number which can be accommodated, primary consideration is given to applicants from West Virginia.* However, up to 10 percent of those admitted to each class may be from out of state.

Application forms for the School of Nursing are distributed by the Office of Admissions and Records at the Medical Center after December 1. Application for admission to the School of Nursing must be made by February 15 of the year the candidate wishes to be admitted. The application may be presented in person or mailed directly to the Assistant to the Dean of Admissions and Records, West Virginia University Medical Center, Morgantown, WV 26506. An application fee of \$10.00, payable to West Virginia University, must accompany the completed application. The deadline for receipt of transcripts and other required materials is February 15.

The applicant's academic record is the major factor in the decision on admission. The West Virginia resident must have a grade-point average of 2.5 or above, on a scale of 0.0 to 4.0, to qualify for consideration. Residents of other states must have an average of 3.2 or above to be considered. West Virginia applicants whose grade-point average falls between 2.3 and 2.5 may petition in writing to the Admissions Committee for special consideration. Out-of-state residents with a grade-point average between 3.0 and 3.2 also may petition. Such a petition must be submitted along with the application and must clearly state why the applicant should receive special consideration.

The review of applicants takes approximately two months. The students are notified by mail after review of all applicants is completed. Two weeks after receipt of the letter of acceptance, the student must send a letter stating acceptance of the position to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance deposit must accompany the letter. This deposit is applied toward the registration fees for the first semester. The deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

## Transfer Students

A student from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum. Application for transfer students should be initiated by January 1. Deadline for receipt of transcripts or other required materials is February 15. Apply to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.



## Registered Nurse Students

The School of Nursing offers graduates of diploma and associate degree nursing programs the opportunity to complete requirements for the baccalaureate degree in nursing at the Morgantown campus, at the Charleston Division of the WVU Medical Center, and by extension at Shepherdstown and Parkersburg. General education credits earned in any accredited college or university may be applied toward the fulfillment of the degree requirements, if the course work is comparable.

Registered Nurse applicants are admitted directly to the School of Nursing. Acceptance and placement in the program is dependent upon the individual's academic record and upon the number of spaces available in the program. The license to practice nursing and a grade-point average of 2.5, or better, are required. Registered Nurses whose grade-point average falls below 2.5 may petition in writing to the Committee on Admissions for special consideration.

About 30 hours of general education courses that meet the WVU Core Curriculum and School of Nursing requirements are recommended before enrollment in the first nursing course, Nursing 99, Basic Concepts of Professional Nursing. Courses from the following are appropriate: English 1 and 2, 6 hours; Chemistry, 6-8 hours; Introductory Psychology, 3 hours; Introductory Sociology, 3 hours; Anatomy, 3-4 hours; Physiology, 3-4 hours; Microbiology, 3-4 hours; Pharmacology and Toxicology, 3-4 hours; Nutrition, 3 hours. Additional Core A, B, or elective credit, before enrolling in Nursing 99, is advised. The second semester of chemistry may be waived if the applicant has successfully completed comparable laboratory science courses and meets other science requirements (anatomy, physiology, microbiology, and pharmacology and toxicology). Additional courses may be advised based on the judgment of the adviser upon review of the student's background.

All registered nurse students are required to enroll in Nursing 99 (Basic Concepts of Professional Nursing.) The purpose of this course is to facilitate transition to the baccalaureate curriculum, to assist students with identified learning needs relevant to the curriculum, and to diagnose the students' readiness for advance placement of junior level courses.

Graduates of associate degree programs establish lower-division nursing credit by the transfer of hours. Graduates of diploma programs establish lower-division credit by comprehensive challenge examination of sophomore nursing courses.

Upon successful completion of Nursing 99, and the establishment of lower-division credit, the registered nurse student is eligible for the advanced placement experience. This experience is a conceptual approach to the challenge of junior courses. During this experience a diagnostic and prescriptive analysis of the learning needs of the individual student is made. This diagnosis forms the basis for progression through the remainder of the nursing curricula. Enrollment in junior or senior courses and/or special prescriptive work may follow the advance placement experience. All prerequisites must be met before advancement into senior nursing courses. The senior courses must be taken by enrollment.

Credit for all required nursing courses must be established by enrollment or by advanced placement.

Upon receipt of a letter of acceptance into the program, the student must contact his/her adviser to establish a progression plan. Six weeks before beginning Nursing 99, the student must notify the Office of Admissions and Records that he/she will be beginning the nursing courses.



Requests for application forms for the Morgantown campus and extension sites should be addressed to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

Application forms for the program at Charleston may be obtained from the Student Affairs Coordinator, Charleston Division, WVU Medical Center, 3110 MacCorkle Ave., S.E., Charleston, WV 25304.

Further information about the program may be obtained from Chairperson, Sophomore Academic Unit, School of Nursing, WVU Medical Center, Morgantown, WV 26506; or Chairperson, Charleston Academic Unit, School of Nursing, Room 2017, WVU Medical Education Bldg., 3110 MacCorkle Ave., S.E., Charleston, WV 25304.

## **Academic Standards and Graduation Requirements**

The student must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) pass all graded nursing courses with a grade of C or better; and (3) pass all required courses.

A student who fails to meet the requirements listed above must present to the adviser an acceptable plan for meeting the requirements. This plan must be within the policies and standards set by the Committee on Academic Standards.

The degree of Bachelor of Science in Nursing (B.S.N) is conferred upon completion of a minimum of 126 hours. Based on waiver of Nursing 3 and General Physical Education, the degree of Bachelor of Science in Nursing (B.S.N.) is conferred on the Registered Nurse student upon completion of a minimum of 123 hours.

## **Non-Credit Continuing Education Program**

The School of Nursing offers a comprehensive state-wide continuing education program for nurses desiring to enhance their contributions to the health care of patients and clients through self development activities. This is made possible through a variety of ongoing workshops, seminars, conferences, training programs, mini-courses, and telelecture courses. The telelecture courses are implemented via a two-way amplified telephone system connecting hospitals throughout the state with the School of Nursing broadcasting station where the courses emanate. All education offerings are approved for Continuing Education Units (CEU) and are a minimum of five contract hours. An individual record of CEUs awarded is maintained by the Division of Off-Campus Credit Programs and is available to participants upon request. General announcements of educational offerings are published annually with specific program information provided during the interim period. Participant's fees vary according to the educational offering and are assessed at the time of registration.

Announcements of educational offerings may be obtained by contacting the School of Nursing.

## **Fees, Expenses, Housing, Transportation**

Students registering pay the fees shown in the WVU Medical Center fees charts, plus special fees and deposits as required. Fees are subject to change without notice.

Expenses of students attending WVU vary widely according to their course of study and their individual tastes.

Students are expected to provide their own equipment and instruments for the clinical courses.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Telephone 304/293-3706.

The University Housing and Residence Life Office, G-18 Towers (phone 304/293-3621), provides information concerning University-owned housing. The Student Life Office in Moore Hall provides information concerning privately owned, off-campus housing, (phone 304/293-5611).

Some clinical experiences require the student to travel in a multi-county area. Each student is responsible for providing her/his own transportation.

## Curriculum

The conceptual framework of the WVU School of Nursing is based on four concepts. These are man, health, environment, and process.

*Man* assumes many roles in life. In nursing these roles are specific yet interdependent. Man-role is conceived as either that of the man-nurse or the man-client. When man in the client role and man in the nurse role come together for the purpose of the nurse assisting the client to achieve *health*, the *process* becomes operational. Process is the means by which the goal is attained. The process between man-nurse and man-client takes place in and influences a certain *environment*. On the other hand, the environment influences process, man-nurse, man-client, and health in many ways.

Thus, the curriculum design for both undergraduate and graduate programs is derived from basic beliefs about the major concepts and from beliefs about learning and holism. In essence, a framework is initially provided to identify the core concepts and their relationships. This framework becomes the student's vehicle or mechanism through which added knowledge can be organized and syntheized, generating new ideas.

### FIRST YEAR

	Hr.
Core A/Electives.....	6
Chem. 11, 12 .....	8
Engl. 1 .....	3
G.P.E. 1, 2 .....	2
Nutrn. 71.....	3
Psych. 1.....	3
Psych. 141 .....	3
Soc.&A. 1 .....	3
	<hr/>
	31

Nsg. 99 (R.N. only) ..... 6

### SUMMER BETWEEN SECOND AND THIRD YEAR

	Hr.
Nsg. 180 .....	3
Nsg. 181 .....	3
	<hr/>
	6

### SECOND YEAR

	Hr.
Pcol. 160 .....	3
Anat. 101 .....	4
Physi. 141 .....	4
M. Bio. 26 .....	4
Engl. 2 .....	3
Nsg. 75.....	2
Nsg. 80.....	4
Nsg. 81.....	2
Nsg. 82.....	4
Nsg. 83.....	2
	<hr/>
	32

### EITHER THIRD OR FOURTH YEAR

	Hr.
Core A/Electives.....	15

**THIRD YEAR****FOURTH YEAR**

	Hr.
Nsg. 175 .....	2
Nsg. 182 .....	4
Nsg. 183 .....	4
Nsg. 184 .....	4
Nsg. 185 .....	4
Soc. & A. 211 .....	3
	<hr/>
	21

	Hr.
Nsg. 275 .....	3
Nsg. 280 .....	3
Nsg. 281 .....	1
Nsg. 282 .....	2
Nsg. 283 .....	2
Nsg. 284 .....	3
Nsg. 285 .....	3
Nsg. 286 .....	3
	<hr/>
	20

**Master of Science in Nursing (M.S.N.)**

The School of Nursing offers a program of study leading to the Master of Science in Nursing (M.S.N.) degree.

The program of study is designed to prepare the professional nurse as a nurse clinician who has the necessary knowledge, attitudes and competencies for the advanced practice of nursing in primary health care.

The philosophy and conceptual framework of the School of Nursing provide the frame of reference for the curriculum sequence. Through the core nursing and elective courses, culminating in a final semester of intense practicum, the student builds the theoretical, scientific, and humanistic base for nursing practice in primary health care which involves an integration of research, leadership and education concepts with clinical experiences.

The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, thesis option, and the opportunity to investigate an area of interest in advanced study. The pattern and duration for the individual student study plan is determined in consultation with a faculty adviser and is based upon the student's background and goals. The program can be completed in four semesters of full-time study.

**Admission Requirements**

The applicant must:

1. Meet the admission requirements of the WVU Graduate School.
2. Have completed a baccalaureate program in nursing accredited by the National League for Nursing (NLN). Applicants with a baccalaureate degree from nursing programs without NLN accreditation or non-nursing programs will be considered on an individual basis.
3. Have completed a course in introductory statistics.
4. Provide the following:
  - a. Statement of philosophy of nursing and professional goals.
  - b. A letter of recommendation from each of the following: head of undergraduate nursing school, employer, and a colleague.
  - c. Evidence of a current professional nursing licensure in at least one state.

Preference is given to an applicant with:

1. An undergraduate grade-point average of B (3.0) or better. (A=4.0).
2. At least one year of professional experience.

When all information has been received, the applicant participates in a personal interview with a graduate faculty member for the purpose of validating admission materials, clarifying admission information, projecting

a study progression plan, and initial advising. Applications for admission are reviewed throughout the year. Class sizes are limited and are based on available faculty resources and space.

**Admission Procedure**

Applicants wishing to apply to the graduate program in nursing must obtain two application forms from the Office of the Graduate Academic Unit, West Virginia University School of Nursing, 3015 Basic Sciences Building, Morgantown, WV 26506. The application to the Graduate School is to be returned to that office. The supplemental application materials for the graduate program in nursing must be returned to the Chairperson, Graduate Academic Unit, School of Nursing, West Virginia University, Morgantown, WV 26506.

**Degree Requirements**

- 1. Completion of 42 semester credit hours. Minimum of 30 credit hours in nursing and 12 hours of electives, 9 of which must be non-nursing.
  - 2. Completion of a master's paper (3 credit hours) or a Thesis (3-6 credit hours).
  - 3. Achievement of an overall academic average of at least B in all work attempted in the master's program.
  - 4. Removal of all conditions, deficiencies, and incomplete grades.
- Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

Students are expected to register for courses with letter grades (A, B, C), with the exception of electives which the student may opt to take with Satisfactory (S) or Unsatisfactory (U) grades, subject to the approval of the adviser.

**M.S.N. Curriculum**

<i>Nursing Theory, Practice, and Research (30-33 credits)</i>	<i>Hr.</i>
Nsg. 300—Advanced Nursing in Primary Health Care 1 .....	3
Nsg. 301—Advanced Nursing in Primary Health Care 2 .....	3
Nsg. 302—Advanced Nursing in Primary Health Care 3 .....	3
Nsg. 310—Advanced Nursing Practice 1 .....	3
Nsg. 311—Advanced Nursing Practice 2 .....	3
Nsg. 312—Advanced Nursing Practice 3 .....	3
Nsg. 370—Theories in Nursing .....	3
Nsg. 373—Research Process and Methods in Nursing .....	3
Nsg. 400—Advanced Nursing Practice 4 .....	3
Nsg. 497—Research (Master's Thesis/Paper) .....	3-6
	<b>30-33</b>
<i>Electives (9-12 credits)</i>	
Nsg. 491—Advanced Study .....	3-0
Cognates .....	<u>12-9</u>
<b>Total .....</b>	<b>42</b>



### A Sample Progression Plan (Full-Time Study)

Semester I	Hr.	Semester II	Hr.	Semester III	Hr.	Semester IV	Hr.
Nsg. 300	3	Nsg. 301	3	Nsg. 302	3	Nsg. 400	3
Nsg. 310	3	Nsg. 311	3	Nsg. 312	3	Nsg. 497	3-0
Nsg. 370	3	Nsg. 373	3	Nsg. 497	3	Elective	3-6
		Elective	3	Elective	3		
	9		12		12		9

TOTAL: 42 credits

### Courses of Instruction in Nursing (Nsg.)

75. *Issues of Nursing 1. I, II.* 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature.
80. *Concepts of Nursing 1. I.* 4 hr. PR: Sophomore standing or consent. Conc.: Nsg. 81. Introduces concepts, principles, and theories of nursing practice in relation to the health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.
81. *Practicum 1. I.* 2 hr. PR: Sophomore standing or consent. Conc.: Nsg. 80. (*Graded Pass-Fail only.*) Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families.
82. *Concepts of Nursing 2. II.* 4 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 83. Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.
83. *Practicum 2. II.* 2 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 82. (*Graded Pass-Fail only.*) Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families.
99. *Basic Concepts of Professional Nursing. I, II, S.* 6 hr. PR: Nursing licensure. Focuses on man (family) related to life cycle, stress adaptation, deviations from wellness. Clinical application of nursing theory stresses interrelatedness of health problems, scientific inquiry, and interpersonal processes. Students are assisted to identify their career goals.
175. *Issues of Nursing 2. I, II.* 2 hr. PR: Nsg. 75 or consent. Issues of nursing practice. Emphasizes related theories and research.
180. *Concepts of Nursing 3. S.* 3 hr. PR: Junior standing or consent. Conc.: Nsg. 181. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and moderate deviations from wellness. Builds on past intellectual and interpersonal arts and psychomotor skills.
181. *Practicum 3. S.* 3 hr. PR: Junior standing or consent. Conc.: Nsg. 180. (*Graded Pass-Fail only.*) Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and moderate deviations from wellness. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor skills.
182. *Concepts of Nursing 4. I.* 4 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 183. Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness.
183. *Practicum 4. I.* 4 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 182. (*Graded Pass-Fail only.*) Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages.

184. *Concepts of Nursing 5. II. 4 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 185.* Continuation of concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages.
185. *Practicum 5. II. 4 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 184. (Graded Pass-Fail only.)* Selected experiences for application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. Emphasizes nursing care problems of increased complexity.
275. *Issues of Nursing 3. I. 3 hr. PR: Nsg. 175 or consent.* Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.
280. *Concepts of Nursing 6. I. 3 hr. PR: Nsg. 180, 182, 184 or consent. Conc.: Nsg. 281.* Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.
281. *Practicum 6. I. 1 hr. PR: Senior standing or consent. Conc.: Nsg. 280. (Graded Pass-Fail only.)* Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills.
282. *Concepts of Nursing 7. I. 2 hr. PR: Senior standing or consent. Conc.: Nsg. 283.* Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.
283. *Practicum 7. I. 2 hr. PR: Senior standing or consent. Conc.: Nsg. 282. (Graded Pass-Fail only.)* Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population.
284. *Concepts of Nursing 8. II. 3 hr. PR: Nsg. 275, 280, 281, 282, 283 or consent. Conc.: Nsg. 285, 286.* The synthesis of a personal and professional philosophy of nursing. Emphasis is on concepts influencing the professional role of the nurse within the health care delivery system.
285. *Practicum 8. II. 3 hr. PR: Nsg. 280, 281 or consent. Conc.: Nsg. 284. (Graded Pass-Fail only.)* Selected experiences of practices of professional nursing within the health care delivery system.
286. *Practicum 9. II. 3 hr. PR: Nsg. 282, 283 or consent. Conc.: Nsg. 284. (Graded Pass-Fail only.)* Selected experiences for practice of professional nursing of acute health care problems or critical isolated incidents.
300. *Nursing in Primary Health Care 1. I, II, S. 3 hr. PR or Conc.: Nsg. 310, 370.* Analysis and synthesis of concepts in nursing and related sciences relevant to the development of a conceptual framework for nursing in primary health care.
301. *Nursing in Primary Health Care 2. I, II, S. 3 hr. PR: Nsg. 310. PR or Conc.: Nsg. 311.* Development of a conceptual model for nursing with emphasis on developing strategies to promote client health.
302. *Nursing in Primary Health Care 3. I, II, S. 3 hr. PR: Nsg. 311. PR or Conc.: Nsg. 312.* Further development and/or refinement of the conceptual model for nursing with specific emphasis on planned change strategies and how these strategies impact health.
310. *Advanced Nursing Practice 1. I. 3 hr. PR or Conc.: Nsg. 300.* Advanced nursing practice focusing on applicability of concepts in students' developing conceptual framework.

311. *Advanced Nursing Practice 2*. I, II, S. 3 hr. PR or Conc.: Nsg. 301. Advanced nursing practice focusing on development and application of nursing strategies within students' conceptual model.
312. *Advanced Nursing Practice 3*. I, II, S. 3 hr. PR or Conc.: Nsg. 302. Advanced nursing practice focusing on application and testing of students' conceptual model, identification of a health problem area within the practice setting, and preparation of a planned change strategy.
370. *Theories in Nursing*. I, II, S. 3 hr. PR: Graduate standing. Introduction to the structure and function of extant theories in nursing as a basis for developing a conceptual framework for nursing.
373. *Research Process and Methods in Nursing*. I, II, S. 3 hr. PR: Nsg. 370. Study of the research process and methods for incorporation into students' conceptual model, practice and research in nursing.
400. *Advanced Nursing Practice 4*. I, II, S. 3 hr. PR: Nsg. 312. Collaborative practice focusing on the evaluation and modification of students' conceptual model for nursing and implementation of a planned change strategy.
491. *Advanced Study*. I, II, 1-3 hr. PR: Graduate standing; consent. In-depth study of topics related to current issues in primary health care. Study may be independent or through specially scheduled seminars.
497. *Research*. I, II, S. 3-6 hr. PR: Nsg. 373; consent. Refinement and implementation of research proposal to meet requirements for the master's thesis/paper.

## School of Pharmacy

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program—including two years of pre-pharmacy.

The objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy.

The pharmacy curriculum consists of three years of professional study preceded by a minimum of two years of study in an accredited college of arts and sciences.

The curriculum is designed to provide the student with the scientific and technical knowledge and communication skills required to practice the profession and to inculcate in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions are also available in various government agencies, professional organizations, and industry. Pharmacists are eligible for commissions in the armed forces and the U.S. Public Health Service.

Graduates also may prepare for careers in teaching and research by entering graduate schools for specialization in pharmacy, pharmaceuticals, pharmacognosy, pharmaceutical chemistry, pharmacy administration, and pharmacology and toxicology. The pharmaceutical industry provides opportunities in a variety of capacities in promotion, distribution, production, and research.



## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy whose objective is to promote the interests of pharmaceutical education. All institutional members must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be a citizen, not less than 21 years of age, and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of an accredited school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate, without further examination, with forty-seven other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.

## Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this and the *WVU Undergraduate Catalog*.

Students preparing for the study of pharmacy may satisfy the requirements for entrance into the School of Pharmacy by majoring in any arts and sciences subject and including in their course selections the following, or their equivalents:

English Composition .....	6 hr.	Chemistry, General .....	8 hr.
College Algebra .....	3 hr.	Chemistry, Organic .....	8 hr.
Trigonometry .....	3 hr.	Physics .....	8 hr.
Principles of Economics .....	6 hr.	Electives* .....	18 hr.
Biology, General .....	8 hr.		
		TOTAL .....	68 hr.

\*Electives must be designed to satisfy University Core Curriculum requirements. Electives: Core Group A—12 hr.; Core Group B—6 hr.

University Core Curriculum Group A includes: Art, English (exclusive of English 1 and 2), Humanities, Languages, Music, Philosophy, Religious Studies, Selected Multidisciplinary Studies, Speech Communication, and Theatre.

University Core Curriculum Group B includes: Education Foundations 1, Forestry 140, Geography, History, Mineral and Energy Resources 97, Political Science, Psychology, Selected Multidisciplinary Studies, Social Science, Sociology and Anthropology, and Economics (for Pharmacy students, Group B Economics would include economics electives beyond the 6-hr. required courses).

Because limited openings are available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal



qualifications which bear upon fitness of applicants for the study and practice of the profession.

Admissions are competitive and are based on cumulative academic average and science average achieved in all prior college courses, a personal interview, and results of the Pharmacy College Admission Test (PCAT).

For admission to the School of Pharmacy, formal application should be made to the Committee on Admissions of the School of Pharmacy as early as possible after January 1, but before April 1, preceding the fall term (first semester) in which the student is seeking enrollment. Formal applications received after the April 1 deadline will be considered only when vacancies exist.

Applicants should write to Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, which will furnish official blanks on which formal application must be made.

A \$10.00 application fee is required and must accompany the application.

Each applicant is expected to deposit \$50.00 before the applicant's name is entered upon the official list of those accepted by the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is forfeited.

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

Complete information may be obtained from the Dean of the School of Pharmacy, or from the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

### **Pharmacy College Admission Test**

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy adviser, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 304 East 45th St., New York, NY 10017.

### **Personal Interview**

A personal interview with the Committee on Admissions will be required. Interviews will be held at the WVU Medical Center and will be arranged as far as possible to suit the convenience of the applicant. Interviews are scheduled during February, March, and April. Only applicants with a cumulative and science average above 2.5 will be called for an interview, unless openings are available.

### **Admission to Advanced Standing**

If space is available, students from other accredited schools of pharmacy may be admitted provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 grade-point average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses will not be transferred.

### **Student Status and Advancement**

The determination of student status is in the hands of the Committee on Academic Standards of the School of Pharmacy. All committee actions are

subject to approval of the Dean. In the School of Pharmacy, all grades, except W, WU, P, and X, are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average in professional subjects. An F grade, or failure to attain a 2.0 average in any semester, will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second professional year must petition the Committee on Academic Standards for advancement to the third professional year. Any student on probation at the beginning of the second semester second professional year, or who qualifies for probation at the end of that semester, shall not be eligible for summer clerkships.

Any first-professional-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-professional-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 14 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

## **Special Requirements**

All students satisfactorily completing the second professional year must obtain professional liability insurance before being allowed to begin the third professional year. Professional liability insurance will be continuously maintained in effect through completion of the third professional year. Failure to have the liability insurance will result in the student's not being allowed to enroll in required courses.

Students in the first professional year will be required to obtain an Intern Certificate from the West Virginia Board of Pharmacy, and to maintain it through completion of the third professional year.

During the second professional year, students will be informed of their assigned schedules for the third professional year's required clinical clerkships. Students will also be informed as to the West Virginia community or communities in which they will reside during these clerkships, the names of their preceptors, and the dates of attendance. The school will provide the student opportunity to participate in choice of assignments, but it reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying clerkship requirements. A maximum of 24 students will be assigned to the clerkship session during any term (e.g., summer, fall, or

spring). Only 8 students will be assigned to each required clerkship during any given four-week period. In the event of over-subscription to any clerkship period or clerkship rotation, priority will be assigned on the basis of grade-point average attained while a full-time student in the School of Pharmacy.

## Requirements for Degree

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

## Course Changes

A student who desires to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission of such change from the Dean.

## Curriculum

Students who have been enrolled in the School of Pharmacy after August, 1975, must complete the School of Pharmacy Curriculum Plan (or modifications of this plan).

### SCHOOL OF PHARMACY CURRICULUM PLAN

#### First Professional Year

First Semester	Hr.	Second Semester	Hr.
Bioch. 139—Gen. Biochem.....	4	M. Bio. 220—Microbiology .....	4
Anat. 101—Hum. Anat. ....	3	Phar. 204—Concepts. Phar. 3 .....	4
Physi. 241—Mech. Body Funct. ....	4	Phar. 228—Phar. Pract. Leg. Env ....	4
Phar. 200—Prep. Phar. Pract.....	2	Phar. 240—Phar. & Ther. 1 .....	4
Phar. 201—Concepts Phar. 1 .....	4	Phar. 241—Fund. Pathophys.....	3
Phar. 227—Phar. Soc. Env. ....	2		
	<hr/> 19		<hr/> 19

#### Second Professional Year

First Semester	Hr.	Second Semester	Hr.
Pcol. 242—Phar. & Ther. 2 .....	6	Phar. 205—Phar. Pract. ....	4
Phar. 203—Concepts Phar. 2 .....	4	Phar. 230—Prof. Asp. Phar. ....	3
Phar. 207—Intro. to Drug Lit. ....	1	Phar. 244—Phar. & Ther. 3 .....	5
Phar. 229—Man, Asp. Phar. Pract....	3	Phar. 260—Princ. Med .....	2
Phar. 243—Chem. Immu. Agts. ....	3	Electives .....	2-4
Electives .....	<hr/> 1-3		
	17-20		<hr/> 16-18

### Third Professional Year

<i>First Session (Summer)</i>	<i>Hr.</i>	<i>Second Session (First Sem.)</i>	<i>Hr.</i>
Phar. 250—Amb. Care Clerk .....	4	Phar. 250, 251, 252, and 253	
Phar. 251—Med. Team Clerk .....	4	(See First Session) .....	16
Phar. 252—Inst. Care Clerk .....	4	or	
Phar. 253—Elect. Clerk .....	4	Electives .....	16
	<hr/>	or	
	16	Free Session	
or			
Free Session			
<i>Third Session (Second Sem.)</i>	<i>Hr.</i>		
Phar. 250, 251, 252, and 253 .....	16		
or			
Electives .....	16		
or			
Free Session			

## Graduate Programs

### Pharmaceutical Sciences

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

#### Admission

Applicants for admission must satisfy the general requirements for admission to the WVU Graduate School. The applicant must possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences. In addition, graduate record examination scores in the verbal, quantitative, and analytical portions of the examinations are required from all students, and TOEFL, or similar scores, are required of foreign students.

#### Academic Standards

No credits are acceptable toward a graduate degree with a grade lower than a C.

The graduate student must have a cumulative grade-point average of at least 3.0 in all graduate courses to qualify for the degrees.

#### Master of Science (M.S.)

The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmacognosy, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceuticals, and pharmacokinetics.

#### Requirements for M.S. Degree

To be eligible for the M.S. degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis.



Upon completion of the course work and research requirements, and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

### **Doctor of Philosophy (Ph.D.)**

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry, pharmaceuticals/biopharmaceutics/pharmacokinetics, and behavioral and administrative pharmacy.

### **Requirements for Ph.D. Degree**

The student's first semester is usually occupied with course work while he or she is under the guidance of an assigned interim committee. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S. en route to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student, with committee advice, may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S., except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted to the Graduate School by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee, and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted for candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy, a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

### **Courses of Instruction in Pharmacy**

Professors Baldwin, Lim, C. Malanga, Mauger, O'Connell, Rosenbluth, and Wojcik; Associate Professors Brister, Covington, Howard, Jacknowitz, Ma, R. Miller, O'Donnell, Proveaux, Riley, and Stratford; Assistant Professors Abate, M. Davis, Hoy, and Ponte; Lecturers Gill and Sensabaugh; Instructors Anido and Skarzenski; Adjunct Associate Professor Glover; Clinical Associate Professor Lowe; Adjunct Assistant Professors Cunningham and Harper; Clinical Assistant Professors Hilligoss, McNeil, Midcap, Miles, and Prettyman; Adjunct Instructor Swisher; Clinical Instructors Alderman, Anderson, Anile, Bailey, Bartsch, J. Bovenizer, N. Bovenizer, Calemene, Capito, Caplan, Carter, Coleman, Corkrean, Crawford, Criss, R. Davis, Day, DeBone, Doyle, Egan, Flanagan, Fruth, Fylstra, Gastineau, Gianettino, Goodykoontz, Grabowski, Grant, Griffith, Griffiths, Hickman, Holmes, Jarvis, Johnson, Johnston, D. Jones, R. Jones, F. Judy, S. Judy, Lang, Lindsay, Logan, Lusk, M. Malanga, Martin, Matheny, Meredith, J. Miller, Muha, Ott, Pawlak, Pierce, Plummer, Plyburn, Ritchie, Robinson, Scott, Shaw, Slaven, Stanley, Stout, Taylor, Toompas, Turk, VanMeter, Warden, Weaver, Zicafoose, and Ziolkowski.

## Pharmacy (Phar.)

200. *Preparation for Pharmacy Practice*. I. 2 hr. PR: First-year pharmacy student or consent. A study of pharmaceutical calculations, pharmaceutical literature, and an overview of pharmacy practice.
201. *Concepts in Pharmaceutics 1*. I. 4 hr. PR: First-year pharmacy student or consent. A discussion of introductory material in the practice of pharmacy and a discussion of the concepts underlying solution dosage forms.
203. *Concepts in Pharmaceutics 2*. I. 4 hr. PR: Phar. 201. Basic principles of formulation, *in vitro* evaluation and bioavailability implications of pharmaceutical dosage forms represented by solids and polyphasic systems. Includes small- and large-scale processing of tablets, capsules, suspensions, emulsions and suppositories.
204. *Concepts in Pharmaceutics 3*. II. 4 hr. Special dosage forms, quality control, and drug dosage regimens of pharmaceutical formulations and their conformity with F.D.A. regulations and good manufacturing practices.
205. *Pharmacy Practice*. II. 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.
207. *Introduction to Drug Literature*. I. 1 hr. PR: Second-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.
211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile dosage forms. 2 hr. lec., 3 hr. lab.
212. *Non-Prescription Drugs*. I. 3 hr. PR: Second-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
213. *Industrial Pharmacy*. I. 4 hr. PR: Phar. 204 or graduate standing. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
214. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
215. *Physical Pharmacy*. II. 3 hr. PR: First-year standing in pharmacy or consent. Designed to illustrate the special application of physiochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. I. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.
227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.

229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I, 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
240. *Pharmacodynamics and Therapeutics* 1. II. 4 hr. PR: First-year standing in pharmacy or consent. Consolidation of pharmacologic and medicinal chemical principles underlying mechanisms of drug action and the therapeutic applications of these pharmacodynamic principles in the management of disease states.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
243. *Chemotherapeutic and Immunobiologic Agents*. I. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.
244. *Pharmacodynamics and Therapeutics* 3. II. 5 hr. PR: Pcol. 242 or consent. Continuation of Pcol. 242.
249. *Drugs and Medicines*. I. 3 hr. (Not intended for pharmacy majors.) PR: General biology or consent. Physiology and organic chemistry suggested. A course intended to introduce the nonhealth professional student to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.
250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will participate on a health care team in an inpatient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Extensive experience will be gained in the practice of pharmacy in institutional centers with emphasis on the pharmacist's relationship with institutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Therapeutics*. I. 3 hr. PR: Phar. 244 or equiv., and consent. A discussion and integration of pharmacological-therapeutic concepts in the study of problems which may be encountered by the pharmacist in drug management of selected disease states.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.
272. *Medicinal Chemistry*. I. 3 hr. PR: Consent.



276. *Pharmaceutical Quality Control*. I. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present. (Course will not be offered in 1982-83.)
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies. (Course will not be offered in 1982-83.)
285. *Radiopharmacy*. II. 3 hr. PR: Second-year standing in pharmacy or consent. Production and properties of radiation; detection of radiation; nuclear medicine instrumentation; the formulation, production, quality control, and use of radioactive materials and radiopharmaceuticals used in diagnosis and treatment.
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S 1-3 hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacognosy, or pharmacy.
290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
300. *Industrial Pharmacy*. I. 4 hr. PR: Phar. 204 or graduate standing. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
315. *Physical Pharmacy*. I or II. 3 hr. Designed to illustrate the special application of physiochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
370. *The Synthesis of Drugs*. I, II, S. 3 hr. PR: Chem. 332 and consent. A survey of the approaches employed in the synthesis of a variety of examples of pharmacologically useful agents. Emphasis is placed on retrosynthetic analysis of target molecules and the application of synthetic procedures to multistep syntheses.
390. *Special Topics*. I, II. 1-4 hr.
391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. Presentation and discussion of special topics and research in the pharmaceutical sciences.
396. *Special Problems in Pharmaceutical Sciences*. I, II. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.



496. *Graduate Seminar. I, II. 1 hr. PR: Consent.* It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of the student's program.
497. *Research. I, II. 1-15 hr.*
498. *Thesis. I, II. 2-4 hr. PR: Consent.*

### **Pharmacology (Pcol.)**

242. *Pharmacodynamics and Therapeutics 2. I. 6 hr. PR: Phar. 240 or consent.* Continuation of Phar. 240.

### **Pharmaceutical Chemistry (Ph. Ch.)**

375. *Advanced Pharmaceutical Analysis. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.*
376. *Advanced Pharmaceutical Analysis. I or II. 3 hr. Continuation of Phar. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.*
377. *Advanced Pharmaceutical Analysis. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.*

### **Pharmaceutics (Pceut.)**

302. *Advanced Pharmaceutics. I or II. 3 hr. Physiochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.*

### **Pharmacognosy (Pcog.)**

340. *Organic Plant Constituents. I or II. 3 hr. Occurrence, properties, biogenesis, etc., of a number of classes of organic compounds derived from plants. Emphasis on secondary metabolites which contain products of pharmaceutical or medicinal interest. (Course will not be offered in 1982-83.)*
341. *Isolation of Plant Constituents. I or II. 3-5 hr. Acquaints the student with techniques used in extraction, separation, and isolation of plant constituents. (Course will not be offered in 1982-83.)*

### **Pharmacy Administration (Phar. Ad.)**

320. *Drug Relation and Control. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.*
321. *Drug Distribution Systems. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.*
323. *Economics of the Pharmaceutical Industry. I or II. 3 hr. History, background, and formation of major drug industries. Oligopolistic practices, mergers, combines, costs of research, and production.*

# Faculty and Staff

E. Gordon Gee, Ed.D., J.D., *President.*

William E. Collins, Ph.D., *Interim Vice-President for Academic Affairs.*

W. Robert Biddington, D.D.S., *Dean, School of Dentistry, and Interim Vice-President for Health Sciences.*

Herman Mertins, Jr., Ph.D., *Interim Vice-President for Administration.*

George D. Taylor, Ed.D., *Vice-President for Student Affairs.*

Henry D. Collins, J.S.D., *Assistant to the President.*

Harry W. Ernst, M.S.J., *Assistant to the President for Public Affairs.*

Marion F. Dearnley, J.D., *Special Assistant to the President and Coordinator of Equal Employment Opportunity and Affirmative Action Affairs.*

## Medical Center

*Charleston Division, Thomas W. Mou, M.D., Dean.*

*Dentistry, James E. Overberger, D.D.S., Acting Dean.*

*Medicine, John E. Jones, M.D., Dean.*

*Nursing, Lorita D. Jenab, Ed.D., Dean.*

*Pharmacy, Sidney A. Rosenbluth, Ph.D., Dean.*

*University Hospital, Eugene L. Staples, M.H.A., Administrator.*

## School of Dentistry

Joseph Abrams, D.D.S. (U. Louisville), *Clinical Assistant Professor of Community Dentistry.*

John D. Adams, D.D.S. (U. Pitt), *Professor Emeritus of Fixed Prosthodontics.*

Camillo A. Alberico, D.D.S. (Marquette U.), *Assistant Dean; Professor of Endodontics.*

Lester H. Bakos, D.D.S. (WVU), *Assistant Professor of Hospital Dentistry.*

Frank S. Balaban, D.D.S. (WVU), *Associate Professor of Endodontics.*

Elise Bassin, D.M.D. (U. Penn), *Assistant Professor of Pediatric Dentistry.*

Jack H. Baur, Jr., D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Endodontics.*

Arthur J. Beaumont, Jr., D.D.S. (WVU), *Instructor in Prosthodontics.*

William P. Bennett, D.D.S. (WVU), *Clinical Instructor (part-time) in Operative Dentistry.*

Henry J. Bianco, Jr., D.D.S. (U. Md.), *Professor and Chairperson of Prosthodontics.*

W. Robert Biddington, D.D.S. (U. Md.), *Dean; Professor of Endodontics.*

Byron H. Black, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry, Charleston Division.*

Joseph J. Bonnello, D.D.S. (U. Pitt), *Clinical Associate Professor (part-time) of Orthodontics.*

Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor and Chairperson of Oral Pathology.*

Dale C. Bowers, D.D.S. (Ohio St. U.), *Associate Professor of Oral Diagnosis and Radiology.*

Kirkland Brace, D.D.S. (Georgetown U.), *Clinical Instructor in Community Dentistry.*

James L. Bramble, D.D.S. (WVU), *Clinical Instructor (part-time) in Prosthodontics.*

Stephen D. Bucklew, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*

Thomas C. Cady, LL.M. (U. Tex.), *Lecturer (part-time) in Dental Jurisprudence.*

Anthony L. Camele, D.D.S. (WVU), *Clinical Instructor (part-time) in Prosthodontics.*

John L. Campbell, D.D.S. (Ind. U.), *Professor Emeritus of Oral Surgery.*

Minter L. Chapman, D.D.S. (WVU), *Clinical Associate Professor (part-time) of Operative Dentistry.*

Wayne G. Christian, D.D.S. (WVU), *Clinical Associate Professor of Endodontics, Charleston Division.*

Damon E. Coffman, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry.*

Myles I. Cogan, D.D.S. (U. Tex.), *Clinical Instructor in Oral Surgery.*

Robert J. Conner, Jr., D.D.S. (WVU), *Associate Professor of Fixed Prosthodontics.*

H. Lee Courtney, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry.*

Richard J. Crout, D.M.D. (U. Pitt), *Associate Professor of Periodontics.*

Rose Marie G. Crystal, B.S. (Columbia U.), *Associate Professor of Dental Hygiene.*

Donald Davidson, D.D.S. (U. Buffalo), *Clinical Associate Professor (part-time) of Oral Surgery.*

Christina DeBiase, M.A. (WVU), Assistant Professor of Dental Hygiene.  
 Leo F. DeCounter, D.D.S. (U. Iowa), Professor of Removable Prosthodontics.  
 John Dempsey, D.D.S. (U. Md.), Clinical Assistant Professor (part-time) of Orthodontics.  
 Gerald Dice, D.D.S. (Ohio St. U.), Clinical Assistant Professor of Community Dentistry.  
 Peter H. Fagan, D.D.S. (Loyola U., Chi.), Clinical Instructor in Hospital Dentistry.  
 Frederick P. Farris, D.D.S., (U. Md.), Clinical Instructor in Hospital Dentistry.  
 Sanford J. Fenton, D.D.S. (NYU), Associate Professor of Pediatric Dentistry.  
 David C. Fogarty, D.D.S. (WVU), Clinical Associate Professor (part-time) of Oral Surgery.  
 James R. Foor, D.D.S. (WVU), Assistant Professor of Operative Dentistry.  
 Pete G. Fotos, D.D.S. (WVU), Assistant Professor of Oral Diagnosis and Radiology.  
 John W. Frye, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.  
 Galvin J. Gaver, D.D.S. (U. Md.), Professor of Operative Dentistry.  
 Lewis Gilbert, D.D.S. (WVU), Clinical Assistant Professor of Oral Surgery.  
 Stephen C. Gladwin III, D.D.S. (Ohio St. U.), Assistant Professor of Operative Dentistry.  
 William L. Graham, D.D.S. (U. Md.), Assistant Dean; Professor and Chairperson of Oral Diagnosis and Radiology.  
 Catherine E. Graves, M.A. (WVU), Assistant Professor of Dental Hygiene.  
 Robert W. Graves, D.D.S. (WVU), Professor and Chairperson of Oral Surgery.  
 James A. Griffin, D.D.S. (Baylor U.), Professor of Endodontics.  
 Geoffrey A. Gwynn, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Pediatric Dentistry.  
 James D. Haddox, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.  
 John B. Haley, Jr., D.D.S. (WVU), Clinical Assistant Professor of Oral Surgery.  
 Joseph D. Hancock, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.  
 George W. Harper, D.D.S. (WVU), Assistant Professor of Removable Prosthodontics.  
 Richard I. Hart, D.D.S. (U. Mich.), Assistant Professor of Operative Dentistry.  
 David M. Hickman, D.D.S. (WVU), Assistant Professor of Dental Practice Management.  
 Robert H. Hornbrook, D.D.S. (WVU), Clinical Associate Professor (part-time) of Periodontics.  
 Jack G. Hutton, Jr., Ph.D. (U. Conn.), Visiting Educational Specialist.  
 Barbara Ingersoll, Ph.D. (Penn St. U.), Associate Professor of Community Dentistry.  
 Kent E. Jackfert, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Hospital Dentistry, Charleston Division.  
 Charles R. Jackson, D.D.S. (WVU), Assistant Professor of Operative Dentistry.  
 James E. Jackson, D.D.S. (WVU), Clinical Instructor in Prosthodontics.  
 S. N. Jagannathan, Ph.D. (U. Bombay), Associate Professor of Community Dentistry.  
 Avia Kaplan, M.S. (Boston U.), Associate Professor of Dental Hygiene.  
 Richard C. Kelly, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Operative Dentistry.  
 Gordon G. Keyes, D.D.S. (U. Md.), Associate Professor of Oral Pathology.  
 Darryl R. King, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Oral Surgery.  
 Edward Klein, D.D.S. (U. Pitt), Clinical Instructor in Hospital Dentistry.  
 Edwin V. Kluth, D.D.S. (Case West. Res. U.), Associate Professor of Maxillofacial Prosthodontics.  
 Barbara K. Komives, M.S. (Ohio St. U.), Associate Professor and Chairperson of Dental Hygiene.  
 Marcia Krouse, M.S. (U. Ky.), Assistant Professor of Dental Hygiene.  
 Lonnie Kuhn, D.D.S. (WVU), Clinical Instructor in Community Dentistry.  
 Stephen J. Kwiatkowski, D.D.S. (WVU), Associate Professor of Fixed Prosthodontics.  
 Claude R. Lee, D.D.S. (U. Ky.), Clinical Instructor in Hospital Dentistry.  
 Young Jai Lee, D.D.S. (U. Korea), Assistant Professor of Maxillofacial Prosthodontics.  
 Frank J. Lopez, D.D.S. (WVU), Assistant Professor of Dental Practice Management.  
 William R. McCutcheon, D.D.S. (WVU), Professor and Chairperson of Community Dentistry.  
 Elizabeth A. McLellan, B.S. (WVU), Clinical Instructor in Dental Hygiene.  
 Hubert E. Martin, D.D.S. (U. Pitt), Clinical Assistant Professor (part-time) of Orthodontics.  
 Jack R. Martin, D.D.S. (U. Md.), Clinical Assistant Professor of Orthodontics.  
 Richard L. Meckstroth, D.D.S. (Loma Linda U., Cal.), Assistant Professor of Community Dentistry.



William W. Merow, D.D.S. (U. Md.), Professor and Chairperson of Orthodontics.  
 Michael T. Montgomery, D.D.S. (Va. Cwealth U.), Assistant Professor of Hospital Dentistry.  
 Deborah A. Monty, B.S. (WVU), Clinical Instructor in Dental Hygiene, Charleston Division.  
 Robert N. Moore, D.D.S. (Northwestern U.), Associate Professor of Orthodontics.  
 Wilbur D. Moorman, D.D.S. (Va. Cwealth U.), Clinical Professor of Hospital Dentistry.  
 Donald J. Morrison, D.D.S. (U. Iowa), Professor and Chairperson of Periodontics.  
 Kelly Mott, D.D.S. (WVU), Clinical Assistant Professor, Charleston Division.  
 Robert L. Murphy, M.S. (Cath. U. Am.), Adjunct Associate Professor of Community Dentistry.  
 David A. Nash, D.M.D. (U. Ky.), Professor and Chairperson of Pediatric Dentistry.  
 Gary G. Naylor, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Operative Dentistry.  
 Leslie E. Nicholson, D.D.S. (WVU), Clinical Instructor (part-time) in Pediatric Dentistry.  
 Linda S. Oliver, D.D.S. (U. Md.), Clinical Assistant Professor (part-time) in Periodontics.  
 Franklin Oliverio, D.D.S. (U. Md.), Clinical Assistant Professor (part-time) of Oral Surgery.  
 James E. Overberger, D.D.S. (U. Pitt), Acting Dean; Professor of Dental Materials.  
 Donald E. Patthoff, D.D.S. (U. Detroit), Clinical Instructor in Hospital Dentistry.  
 Robert Pawlicki, Ph.D. (York U.) Adjunct Associate Professor of Community Dentistry.  
 James L. Payne, D.D.S. (U. Mo.), Clinical Instructor in Hospital Dentistry.  
 Robert G. Pifer, D.D.S. (WVU), Associate Professor of Oral Diagnosis and Radiology.  
 David T. Puderbaugh, D.D.S. (WVU), Professor and Chairperson of Dental Practice Management.  
 H. H. Reed, D.D.S. (WVU), Clinical Assistant Professor of Periodontics.  
 Vernon Rodeffer, D.D.S. (U. Md.), Assistant Professor of Operative Dentistry.  
 William J. Rosenfeld, D.D.S. (SUNY), Clinical Assistant Professor of Periodontics.  
 Jack A. Roth, D.D.S. (U. Md.), Assistant Professor of Removable Prosthodontics.  
 Richard A. Salzer, D.M.D. (U. Penn), Clinical Assistant Professor of Hospital Dentistry.  
 Robert E. Sausen, D.D.S. (U. Minn.), Professor and Chairperson of Operative Dentistry.  
 Donald T. Sauter, D.D.S. (Ohio St. U.), Clinical Instructor (part-time) in Prosthodontics.  
 Carol A. Sherrill, M.S. (U. Mich.), Associate Professor of Dental Hygiene.  
 Alex W. Skaff, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.  
 A. Eddy Skidmore, D.D.S. (WVU), Professor and Chairperson of Endodontics.  
 Homer W. Smith, D.D.S. (WVU), Associate Professor of Oral Diagnosis and Radiology.  
 Norton P. Smith, D.D.S. (WVU), Assistant Professor of Fixed Prosthodontics.  
 James M. Snyder, D.D.S. (WVU), Clinical Instructor in Community Dentistry.  
 Charles J. Stewart, D.D.S. (WVU), Instructor in Endodontics and Prosthodontics.  
 Lawrence E. Syner, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.  
 Andrew J. Tatich, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Orthodontics.  
 Daniel R. Taylor, D.D.S. (WVU), Clinical Instructor in Endodontics.  
 Nancy E. Taylor, D.D.S. (WVU), Clinical Instructor in Community Dentistry.  
 William C. Taylor, D.D.S. (WVU), Clinical Assistant Professor of Prosthodontics.  
 James G. Thomas, D.D.S. (Temple U.), Professor of Oral Diagnosis and Radiology.  
 Kay F. Thompson, D.D.S. (U. Pitt), Clinical Professor of Community Dentistry.  
 Harold E. Tucker, D.D.S. (Va. Cwealth U.), Professor of Fixed Prosthodontics.  
 LeRoy J. Utt, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Operative Dentistry.  
 James E. Valentine, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Orthodontics.  
 Edmond G. VandenBosche, D.D.S. (U. Md.), Associate Professor of Operative Dentistry.  
 Alfred VanRiper, D.D.S. (WVU), Clinical Associate Professor (part-time) of Removable Prosthodontics.  
 Joseph E. Van Sickles, D.D.S. (Va. Cwealth U.), Assistant Professor of Oral Surgery.  
 David H. Walker, D.D.S. (WVU), Associate Professor of Dental Practice Management, Charleston Division.  
 Robert L. Wanker, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Periodontics.



William A. Weaver, D.D.S. (Ohio St. U.), Associate Professor of Operative Dentistry.  
 John T. Welch, D.D.S. (U. Md.), Professor and Chairperson of Hospital Dentistry.  
 Stephen G. Wilbourn, D.D.S. (WVU), Clinical Instructor in Community Dentistry.  
 John B. Wilfong, D.D.S. (Ohio St. U.), Clinical Assistant Professor (part-time) of Orthodontics.  
 Thomas S. Wilkerson, D.D.S. (WVU), Clinical Assistant Professor of Pedodontics.  
 John A. Wilson, D.D.S. (Ohio St. U.), Clinical Associate Professor of Community Dentistry.  
 Michael A. Wilson, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Oral Surgery.  
 William M. Wine, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

## School of Medicine

Fouad Hassan Abdalla, M.D. (Alexandria U., Egypt), Clinical Assistant Professor of Radiology (Diagnostic).  
 Ernest L. Abernathy, M.D. (Emory U.), Clinical Professor of Pathology.  
 Henry L. Abrons, M.D. (Case West. Res. U.), Adjunct Instructor in Medicine (Pulmonary).  
 Ali F. AbuRahma, M.B.Ch. (Alexandria U., Egypt), Clinical Instructor in Surgery.  
 Margaret J. Albrink, M.D. (Yale U.), Professor of Medicine (Metabolism-Endocrinology).  
 Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), Professor Emeritus of Pathology.  
 Gabriel Al-Hajj, M.D. (Am. U. Beirut), Clinical Assistant Professor of Surgery.  
 Joel Allen, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Greenbrier D. Almond, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 R. Stephen Amato, M.D. (U. Nebr.), Associate Professor of Pediatrics.  
 Constantino Y. Amores, M.D. (U. Santo Tomas), Clinical Assistant Professor of Neurological Surgery.  
 Edwin L. Anderson, M.D. (U. S.C.), Assistant Professor of Pediatrics, Charleston Division.  
 Roger W. Anderson, M.D. (WVU), Assistant Professor of Otolaryngology.  
 Warren T. Anderson, M.D. (Temple U.), Clinical Associate Professor of Medicine (Cardiology).  
 Charles E. Andrews, M.D. (Boston U.), Professor of Medicine (Pulmonary).  
 Vicente Anido, M.D. (Havana U.), Professor Emeritus of Pathology (Clinical).  
 Dominic A. Antico, M.D. (U. Chi.), Clinical Associate Professor of Radiology (Diagnostic).  
 David R. Antonio, M.B.B.S. (U. W. Indies), Clinical Assistant Professor of Orthopedic Surgery.  
 Michael Arbitman, M.D. (U. Louisville), Clinical Associate Professor of Radiology (Diagnostic).  
 James G. Arbogast, M.D. (WVU), Assistant Professor of Family Practice.  
 Jerome Arnett, M.D. (WVU), Clinical Assistant Professor of Medicine (Pulmonary).  
 Don L. Arnwine, M.H.A. (Northwestern U.), Clinical Professor of Community Medicine.  
 Steven A. Artz, M.D. (Syracuse U.), Clinical Associate Professor of Medicine (Comprehensive Medicine).  
 Muhammad Ashraf, M.B.B.S. (King Edward Med. C.), Assistant Professor of Obstetrics and Gynecology.  
 Terry A. Athari, M.D. (Tehran Med. Sch.), Clinical Assistant Professor of Obstetrics and Gynecology.  
 Michael D. Atfield, (Edinburgh U.), Adjunct Instructor in Community Medicine.  
 Bipinchandra M. Avashia, M.B.B.S. (Med. C., Baroda), Clinical Assistant Professor of Medicine (Pulmonary).  
 Michael D. Avington, M.D. (Georgetown U.), Clinical Associate Professor of Medicine (Cardiology).  
 Frank J. Ayd, M.D. (U. Md.), Clinical Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
 Moustassem Ayoubi, M.D. (Damascus U.), Clinical Associate Professor of Pediatrics.  
 Robert W. Azar, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.  
 Albert J. Azzaro, Ph.D. (WVU), Professor of Neurology and Pharmacology and Toxicology.

Ronald C. Backer, Ph.D. (U. Ariz.), Adjunct Assistant Professor of Pharmacology and Toxicology.

Bryan Ballantyne, Ph.D., M.D. (U. Leeds, UK), Adjunct Professor of Pharmacology and Toxicology.

Prakash C. Bangani, M.B.B.S. (Med. C., Indore), Clinical Assistant Professor of Orthopedic Surgery.

Carl C. Barger, M.D. (Med. C. Va.), Clinical Associate Professor of Radiology (Diagnostic).

Carolyn E. Barnes, Ph.D. (U. Pitt), Associate Professor of Physical Therapy.

Dilip K. Basu, M.B.B.S. (U. Calcutta), Clinical Assistant Professor of Medicine (Cardiology).

Mildred Bateman, M.D. (Wom. Med. C. Pa.), Clinical Professor of Behavioral Medicine and Psychiatry.

John J. Battaglini, M.D. (Med. C. Va.), Clinical Assistant Professor of Obstetrics and Gynecology.

Michael A. Bauer, M.D. (U. Chicago), Adjunct Instructor in Medicine (Pulmonary).

Kamal M. Behnam, M.D. (U. Cairo), Clinical Associate Professor of Obstetrics and Gynecology.

Soad Bekheit-Saad, M.D. (U. Cairo), Ph.D. (Queen's U., Belfast), Associate Professor of Medicine (Cardiology).

John A. Belis, M.D. (Jeff. Med. C.), Associate Professor of Urology.

Ross O. Bell, M.D. (U. Penn), Clinical Associate Professor of Pathology.

John A. Bellotte, M.D. (WVU), Clinical Assistant Professor of Anesthesiology.

William A. Beresford, Ph.D. (Oxford U.), Professor of Anatomy.

James L. Bergman, M.D. (Tulane U.), Clinical Instructor in Family Practice.

Stuart K. Bergman, M.D. (Geo. Wash. U.), Clinical Assistant Professor of Anesthesiology.

Ellen S. Berler, Ph.D. (SUNY—Binghamton), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Bruce L. Berry, M.D. (WVU), Clinical Assistant Professor of Obstetrics and Gynecology.

Robert Bettinger, M.D. (Med. C. Va.), Associate Professor of Anesthesiology.

Harry A. Bishop, M.D. (U. Calif.—S.F.), Clinical Associate Professor of Radiology (Diagnostic).

J. David Blaha, M.D. (U. Mich.), Assistant Professor of Orthopedic Surgery.

James B. Blair, Ph.D. (U. Va.), Professor of Biochemistry.

James E. Bland, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.

Donald M. Blatchley, M.D. (Jeff. Med. C.), Clinical Professor Emeritus of Medicine (Dermatology).

James E. Blaydes, M.D. (U. Penn), Clinical Associate Professor of Ophthalmology.

Nancie A. Blehschmidt, B.S. (WVU), Instructor in Medicine (Metabolism-Endocrinology) and Medical Technology.

Larry D. Blessing, M.D. (U. Mo.), Assistant Professor of Medicine (Gastroenterology).

Donald A. Blum, M.D. (WVU), Clinical Assistant Professor of Family Practice.

Robert C. Bock, M.D. (U. Louisville), Clinical Associate Professor of Surgery.

James P. Boland, M.D. (Jeff. Med. C.), Professor and Chief of Surgery, Charleston Division.

Walter A. Bonney, Jr., M.D. (Columbia U.), Clinical Professor of Obstetrics and Gynecology.

Beverly R. Born, B.S. (WVU), Clinical Instructor in Physical Therapy.

Susan P. Borsuk, B.S. (U. Md.), Clinical Instructor in Physical Therapy.

Edward M. Bosanac, Dr.P.H. (U. Pitt), Associate Professor of Community Medicine.

Jerry E. Bouquot, D.D.S. (U. Minn.), Associate Professor of Pathology.

Mohammed M. Boustany, M.D. (Damascus U.), Clinical Assistant Professor of Surgery.

K. Douglas Bowers, Jr., M.D. (Jeff. Med. C.), Clinical Associate Professor of Orthopedic Surgery.

Carole Brooks Boyd, M.D. (Wayne St. U.), Associate Professor of Pathology.

Bert E. Bradford, Jr., M.D. (Wash. U.), Clinical Professor Emeritus of Surgery.

Nancy K. Brallier, M.S.W. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Eric P. Brestel, M.D. (U. Fla.), Assistant Professor of Medicine (Allergy and Clinical Immunology) and Physician, University Health Service.

James E. Brick, M.D. (WVU), Assistant Professor of Medicine (Comprehensive Medicine).

John F. Brick, M.D. (WVU), Assistant Professor of Neurology.

George J. Brodmerkel, Jr., M.D. (Stritch Sch. Med.), Clinical Professor of Medicine (Gastroenterology).

Arlo P. Brooks, Jr., M.D. (WVU), Clinical Associate Professor of Family Practice.

John W. Brough, Dr.P.H. (U. N.C.), Adjunct Assistant Professor of Community Medicine.

Paul B. Brown, Ph.D. (U. Chicago), Associate Professor of Physiology.

Timothy A. Brown, M.D. (WVU), Clinical Instructor in Medicine (Dermatology).

James Bryant, M.D. (WVU), Clinical Associate Professor of Otolaryngology.

Jeffrey A. Buck, Ph.D. (Kent St. U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Dennis Burech, M.D. (Ohio St. U.), Clinical Associate Professor of Pediatrics.

Barbara F. Burkart, Cert. P.T. (U. Penn), Clinical Instructor in Physical Therapy.

Sandy L. Burkart, Ph.D. (WVU), Chairperson, Director, and Professor of Physical Therapy.

David B. Burr, Ph.D. (U. Colo.), Assistant Professor of Anatomy and Orthopedic Surgery.

Robert G. Burrell, Ph.D. (Ohio St. U.), Professor of Microbiology.

Fred R. Butcher, Ph.D. (Ohio St. U.), Chairperson, Professor of Biochemistry.

Roy L. Butcher, Ph.D. (Iowa St. U.), Professor of Obstetrics and Gynecology.

Christy Ann Butler, M.S. (U. N.C.), Assistant Professor of Medical Technology.

John W. Byrd, M.D. (WVU), Clinical Assistant Professor of Medicine (Rheumatology).

Bobby Lee Caldwell, M.D. (Bowman Gray Sch. Med.), Clinical Professor of Pathology.

Edward J. Callahan, Ph.D. (U. Vt.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Margaret Calvert, B.S., Cert.P.T. (U. Del.), Clinical Instructor in Physical Therapy.

Fred C. Campbell, Jr., M.D. (Baylor U.), Clinical Assistant Professor of Medicine (Comprehensive Medicine).

William J. Canady, Ph.D. (Geo. Wash. U.), Professor of Biochemistry.

James Capage, Ph.D. (Ohio U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Donna L. Carlson, M.D. (Loma Linda U.), Clinical Assistant Professor of Pediatrics.

Billy R. Carlton, Ed.D. (U. Tenn.), Adjunct Associate Professor of Community Medicine.

Stephen W. Carmichael, Ph.D. (Tulane U.), Associate Professor of Anatomy.

Marshall J. Carper, M.D. (Med. C. Va.) Professor and Chief of Family Practice, Charleston Division.

James F. Carruth, Ph.D. (U. Ill.), Clinical Professor of Behavioral Medicine and Psychiatry.

Donald C. Carter, M.D. (U. Nebr.), Professor of Behavioral Medicine and Psychiatry.

Gregory S. Carter, M.D. (WVU), Clinical Assistant Professor of Neurology.

William H. Carter, M.D. (U. Va.), Clinical Professor of Medicine (Cardiology).

Robert M. Castellan, M.D. (Brown U.), Adjunct Instructor in Community Medicine and Medicine (Pulmonary).

John N. Casto, M.D. (WVU), Clinical Instructor in Family Practice.

Vincent Castranova, Ph.D. (WVU), Adjunct Associate Professor of Physiology.

Leonidas Castro, M.D. (Nat'l. U. Colombia), Clinical Professor of Radiology (Radiation Therapy).

John R. Casuccio, M.D. (Ohio St. U.), Instructor in Otolaryngology.

Carl H. Cather, Jr., M.D. (Harvard U.), Clinical Associate Professor of Otolaryngology.

Carrel M. Caudill, M.D. (Duke U.), Clinical Professor of Neurological Surgery.

Jose A. Celis, M.D. (U. Santo Tomas), Clinical Assistant Professor of Urology.

Graciano E. Cendana, M.D. (U. Santo Tomas), Clinical Associate Professor of Pathology.

John T. Chambers, M.D. (Case West. Res. U.), Clinical Professor of Obstetrics and Gynecology.

June R. Chambers, M.D. (Case West. Res. U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Malcolm L. Chaney, M.D. (WVU), Assistant Professor of Family Practice, Charleston Division.

Cheng-Tien Chang, Ph.D. (SUNY), Assistant Professor of Radiology (Radiation Safety).

Ho-Huang Chang, M.B. (Kaohsiung Med. C.), Clinical Assistant Professor of Pathology.

William W. L. Chang, M.D. (Nat'l. Taiwan U.), Associate Professor of Pathology.

Jacques Charbonniez, M.D. (French U.), Clinical Associate Professor of Surgery.

Nyles Charon, Ph.D. (U. Minn.), Associate Professor of Microbiology.



V. Krishnarao Chevuru, M.D. (Fac. Med., Andhra U.), Clinical Instructor in Anesthesiology.

Elliott W. Chideckel, M.D. (U. Md.), Associate Professor of Medicine (Metabolism-Endocrinology).

Louise Christensen, B.S. (WVU), Clinical Instructor in Physical Therapy.

Thomas E. Chvasta, M.D. (U. Pitt), Clinical Associate Professor of Medicine (Gastroenterology).

Joseph A. Cipcic, M.D. (U. Pitt), Clinical Assistant Professor of Otolaryngology.

Thomas S. Clark, M.D. (WVU), Clinical Assistant Professor of Family Practice.

George B. Clarke, M.D. (Case West. Res. U.), Clinical Professor of Orthopedic Surgery.

John P. Claude, M.S.W. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Paul L. Clausell, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

David A. Clayman, Ph.D. (U. Vt.), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Ronald L. Cleavenger, M.D. (WVU), Assistant Professor of Family Practice and Physician, University Health Service.

Robert J. Clubb, M.D. (Northwestern U.), Clinical Assistant Professor of Neurological Surgery.

Robert C. Cody, M.A. (U. Iowa), Professor of Otolaryngology.

Brenda K. Colasanti, Ph.D. (WVU), Professor of Ophthalmology, and Pharmacology and Toxicology.

Howard D. Colby, Ph.D. (SUNY), Professor of Physiology.

Frank L. Collins, Ph.D. (Auburn U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

David F. Colvin, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine).

Philip E. Comer, Ph.D. (WVU), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Patrick Condry, M.D. (WVU), Clinical Assistant Professor of Medicine (Dermatology).

Janice W. Cone, M.S. (U. Denver), Associate Professor of Behavioral Medicine and Psychiatry.

Francis W. Conley, M.D. (U. Iowa), Clinical Associate Professor of Medicine (Comprehensive Medicine).

Fredrick A. Conley, M.D. (WVU), Clinical Instructor in Family Practice.

Arthur G. Conn, M.D. (Wayne St. U.), Assistant Professor of Radiology (Diagnostic).

Karen A. Connors, Ph.D. (Temple U.), Adjunct Assistant Professor of Pediatrics.

Frederick M. Cooley, M.D. (WVU), Clinical Associate Professor of Community Medicine.

Creel S. Cornwell, Jr., M.D. (WVU), Clinical Assistant Professor of Medicine (Cardiology).

Joel I. Cossrow, M.D. (T. Jeff. Med. U.), Clinical Assistant Professor of Radiology (Diagnostic).

Donald W. Cox, M.D. (Geo. Wash. U.), Chairperson and Associate Professor of Obstetrics and Gynecology.

Charles R. Craig, Ph.D. (U. Wisc.), Professor of Pharmacology and Toxicology.

Paul L. Crawford, Ph.D. (Ohio U.), Clinical Professor of Behavioral Medicine and Psychiatry.

James C. Crews, M.A. (U. Iowa), Adjunct Assistant Professor of Community Medicine.

William D. Crigger, M.D. (Temple U.), Clinical Assistant Professor of Family Practice.

Thomas W. Crosby, M.D. (WVU), Clinical Associate Professor of Neurology and Pathology.

Michael R. Cuadra, M.D. (U. Santo Tomas), Clinical Assistant Professor of Pathology.

James L. Culbertson, Ph.D. (Tulane U.), Associate Professor of Anatomy.

Roberta Curiel, M.S. (WVU), Clinical Instructor in Otolaryngology.

Larry Curnutte, M.D. (WVU), Clinical Assistant Professor of Obstetrics and Gynecology.

John C. Cwik, M.D. (Jeff. Med. C.), Clinical Professor of Anesthesiology.

Robert D'Alessandri, M.D. (N.Y. Med. C.), Associate Professor of Medicine and Section Chief of Comprehensive Medicine.

Jean Danner, Ph.D. (Brandeis U.), Adjunct Assistant Professor of Biochemistry.

Aloysius Davis, M.D. (Harvard U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Charles M. Davis, Jr., M.D. (U. Penn), Clinical Associate Professor of Orthopedic Surgery.

DelRoy R. Davis, M.D. (U. Wash.), Clinical Professor of Family Practice.



Mary E. Davis, Ph.D. (Mich. St. U.), Assistant Professor of Pharmacology and Toxicology.

Wirt L. Davis, M.D. (Med. C. Va.), Clinical Assistant Professor of Orthopedic Surgery.

Samuel J. Deal, Ph.D. (U. Minn.), Professor of Microbiology.

Harakh V. Dedhia, M.B.B.S. (Grant Med. C.), Assistant Professor of Anesthesiology and Medicine (Comprehensive Medicine).

Cordell A. De La Pena, M.D. (U. Santa Tomas), Clinical Assistant Professor of Pathology.

Bharati S. Desai, M.B.B.S. (Baroda Med. C.), Assistant Professor of Behavioral Medicine and Psychiatry.

Carlos A. deSanctis, M.D. (Nat'l. U. Rosario), Assistant Professor of Anesthesiology.

Anthony DiBartolomeo, M.D. (WVU), Associate Professor of Medicine; Section Chief of Rheumatology; Assistant Dean for Graduate Medical Education; Medical Director of Ambulatory Care.

Thomas O. Dickey, M.D. (Ohio St. U.), Clinical Assistant Professor of Family Practice.

Herbert G. Dickie, Jr., M.D. (U. Va.), Clinical Assistant Professor of Surgery.

Daniel Dickinson, M.D. (U. Pitt), Clinical Assistant Professor of Surgery.

Ronald W. Dillow, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).

Beverly Diurba, B.S. (U. Pitt), Clinical Instructor in Physical Therapy.

Larry A. Dodd, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.

Eugene Dorsey, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Dinesh M. Doshi, M.B.B.S. (U. Bombay), Assistant Professor of Anesthesiology.

Steven Dreyer, Ph.D. (U. N.D.), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

John J. Duda, Ph.D. (WVU), Adjunct Assistant Professor of Microbiology.

Harry E. Duncan, Jr., M.D. (WVU), Clinical Assistant Professor of Medicine (Gastroenterology).

Ralph O. Dunker, Jr., M.D. (Ohio St. U.), Associate Professor of Neurological Surgery.

Dorothy C. Dunning, Ph.D. (Tufts U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

James Durig, M.D. (WVU), Clinical Assistant Professor of Urology.

John W. Durkin, Jr., M.D. (U. Vt.), Associate Professor of Obstetrics and Gynecology and Chief of Obstetrics and Gynecology, Wheeling Division.

George W. Easley, M.D. (Med. C. Va.), Clinical Associate Professor Emeritus of Surgery.

Leonard M. Eckmann, M.D. (NYU), Clinical Assistant Professor of Family Practice.

Barry A. Edelstein, Ph.D. (Memphis St. U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Roy A. Edwards, Jr., M.D. (Med. C. Va.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Sam B. Edwards, Jr., M.D. (Duke U.), Associate Professor of Pediatrics (Pediatric Cardiology).

John P. Elder, Ph.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Richard W. Eller, M.D. (Temple U.), Professor of Anesthesiology.

John S. Ellingson, Ph.D. (U. Mich.), Associate Professor of Biochemistry.

Thomas E. Ellis, Psy.D. (Baylor U.), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

M. K. Elyaderani, M.D. (Tehran U.), Associate Professor of Radiology (Diagnostic).

Allan L. Engelberg, M.D. (Mt. Sinai Sch. Med.), Adjunct Assistant Professor of Community Medicine.

Irwin S. Eskwith, M.D. (Syracuse U.), Clinical Assistant Professor of Medicine (Cardiology).

Patricia R. Evans, M.D. (WVU), Instructor in Surgery (Emergency Room).

Abdo Faddoul, M.D. (St. Joseph French U.), Clinical Instructor in Urology.

Alexander V. Fakadej, M.D. (U. Va.), Associate Professor of Neurology and Pediatrics.

Donald Farmer, M.D. (WVU), Clinical Assistant Professor of Medicine (Dermatology).

Kevin J. Farrell, M.D. (Med. C. Wisc.), Assistant Professor of Surgery and Anesthesiology.

Okey B. Fawley, M.S.W. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Jeffrey Fedan, Ph.D. (U. Ala.), Adjunct Assistant Professor of Pharmacology and Toxicology.

Charles W. Fedde, M.D. (U. Colo.), Clinical Assistant Professor of Surgery.

Edmundo E. Figueroa, M.D. (U. Santo Tomas), Clinical Assistant Professor of Surgery.

Kenneth M. Fink, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Melanie A. Fisher, M.D. (Penn St. U.), Assistant Professor of Medicine (Comprehensive Medicine).

Barbara Fitzpatrick, M.S. (WVU), Clinical Instructor in Otolaryngology.

William W. Fleming, Ph.D. (Princeton U.), Professor and Chairperson of Pharmacology and Toxicology.

Edmund B. Flink, M.D., Ph.D. (U. Minn.), Benedum Professor of Medicine (Metabolism-Endocrinology) and Behavioral Medicine and Psychiatry.

Richard E. Flood, M.D. (Jeff. Med. C.), Clinical Professor of Family Practice.

David C. Fogarty, M.D. (WVU), Clinical Assistant Professor of Surgery.

Joseph A. Fontana, M.D. (U. Penn.), Assistant Professor of Medicine (Hematology/Oncology) and Biochemistry.

Richard J. Fonte, M.D. (N.J. Med. Sch.), Assistant Professor of Behavioral Medicine and Psychiatry.

Leland J. Foshag, M.D. (Ohio St. U.), Assistant Professor of Surgery.

John F. Foss, M.D. (U. Iowa), Associate Professor of Obstetrics and Gynecology.

Daniel S. Foster, M.D. (Stanford U.), Clinical Instructor in Surgery.

John L. Fox, M.D. (Geo. Wash. U.), Professor of Neurological Surgery.

Gunter N. Franz, Ph.D. (U. Wash.), Associate Professor of Physiology.

John P. Franz, M.D. (Georgetown U.), Clinical Assistant Professor of Urology.

David G. Frazer, Ph.D. (WVU), Adjunct Associate Professor of Physiology.

Richard G. Frederickson, Ph.D. (U. N. Dak.), Associate Professor of Anatomy.

John C. Frich, Jr., M.D. (Geo. Wash. U.), Professor of Radiology and Section Chief of Radiation Therapy.

Morton H. Friedman, Ph.D. (U. Tenn.), Associate Professor of Anatomy.

James L. Frost, M.D. (Johns Hopkins U.), Associate Professor of Pathology.

Nicholas W. Fugo, M.D. (U. Chi.), Ph.D. (St. U. Iowa), Professor Emeritus of Obstetrics and Gynecology.

John L. Fullmer, M.D. (WVU), Clinical Associate Professor of Family Practice.

Peter Gabriel, M.D. (Creighton U.), Clinical Assistant Professor of Radiology (Diagnostic).

Orlando F. Gabriele, M.D. (Yale U.), Professor and Chairperson of Radiology.

R. Brooks Gainer, M.D. (WVU), Clinical Assistant Professor of Medicine (Infectious Diseases).

Richard D. Gais, M.D. (WVU), Clinical Instructor in Family Practice.

Hugh Galford, B.S. (D&E C.), Clinical Assistant Professor of Physical Therapy.

Rama Ganguly, Ph.D. (U. Calcutta), Associate Professor of Medicine (Infectious Diseases) and Microbiology.

Barbara Garland, Ph.D. (U. N.C.), Assistant Professor of Community Medicine.

Ronald D. Gaskins, M.D. (U. S.C.), Associate Professor of Medicine (Gastroenterology).

Dominic J. Gaziano, M.D. (Med. C. Va.), Clinical Professor of Medicine (Pulmonary Medicine).

James A. Genin, M.D. (WVU), Clinical Instructor in Ophthalmology.

Dimitar Georgiev, M.D. (U. St. Klement), Clinical Assistant Professor of Obstetrics and Gynecology.

Maria Georgiev, M.D. (Med. Sch. Charles U.), Associate Professor of Medicine, Charleston Division.

Vincent F. Gerencser, Ph.D. (U. Ky.), Associate Professor of Microbiology.

Alfred D. Ghaphery, M.D. (U. Pitt), Clinical Associate Professor of Surgery.

Robert L. Ghiz, M.D. (Northwestern U.), Clinical Associate Professor of Orthopedic Surgery.

William E. Gilmore, M.D. (U. Wisc.), Clinical Professor of Surgery.

Fernando G. Giustini, M.D. (U. Rome), Clinical Professor of Obstetrics and Gynecology.

Wilbert E. Gladfelter, Ph.D. (U. Penn), Associate Professor of Physiology.

Henry R. Glass, Jr., M.D. (U. Louisville), Clinical Associate Professor of Surgery.

Lewis Goldberg, Ph.D. (Am. U.), Clinical Instructor in Behavioral Medicine and Psychiatry.

A. Raphael Gomez, M.D. (Bowman Gray Sch. Med.), Clinical Assistant Professor of Medicine (Hematology/Oncology).

Irving J. Goodman, Ph.D. (U. Rochester), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Robert L. Goodman, M.D. (U. Pitt), Assistant Professor of Physiology.

Andrew Goodwin, M.D. (U. Mich.), Clinical Professor of Radiology (Diagnostic).

Claudia (Morgan) Goodwin, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).

James E. Goodwin, M.D. (Temple U.), Clinical Instructor in Family Practice.

Thomas W. Graber, M.D. (Case West. Res. U.), Clinical Assistant Professor of Surgery.

David F. Graf, M.D. (Albany Med. C.), Assistant Professor of Anesthesiology.  
 Anthony W. Graham, M.D. (WVU), Clinical Assistant Professor of Family Practice.  
 Robert J. Graham, Ed.D. (U. Mich.), Adjunct Assistant Professor of Community Medicine.  
 Juan L. Granados, M.D. (U. Madrid), Associate Professor of Obstetrics and Gynecology.  
 Michael A. Grant, M.D. (WVU), Assistant Professor of Surgery.  
 Robert W. Graves, D.D.S. (WVU), Professor of Pharmacology and Toxicology.  
 David B. Gray, M.D. (U. Md.), Clinical Professor of Surgery.  
 Francis H. Green, M.D. (Manchester U.), Adjunct Assistant Professor of Pathology.  
 Daniel H. Gregory, M.D. (U. Va.), Clinical Professor of Medicine (Gastroenterology).  
 Galo E. Grijalva, M.D. (U. Mexico), Clinical Instructor in Pediatrics.  
 Frank C. Griswold, M.D. (WVU), Clinical Assistant Professor of Surgery.  
 George Grubb, M.D. (Med. C. Va.), Clinical Associate Professor of Obstetrics and Gynecology.  
 Stephen Grubb, M.D. (Med. C. Va.), Assistant Professor of Medicine, Charleston Division.  
 Beverly Ann Gryth, B.A. (Augsburg C.), Clinical Assistant Professor of Physical Therapy.  
 Robert F. Gustke, M.D. (WVU), Clinical Assistant Professor of Medicine (Gastroenterology).  
 Barbara J. Gutman, M.Ed. (U. Pitt), Assistant Professor of Medical Technology.  
 Ludwig Gutmann, M.D. (Columbia U.), Professor and Chairperson of Neurology; Professor of Physiology.  
 Nathaniel G. Hagler, III, M.D. (U. Md.), Assistant Professor of Radiology (Diagnostic).  
 Nicholas Hahon, B.S. (D&E C.), Adjunct Assistant Professor of Pediatrics.  
 Duane E. Haines, Ph.D. (Mich. St. U.), Professor of Anatomy.  
 Charles E. Haislip, M.D. (WVU), Clinical Associate Professor of Otolaryngology.  
 Milton R. Hales, M.D. (U. S.C.), Professor of Pathology.  
 Carl B. Hall, Sr., M.D. (Med. C. Va.), Clinical Professor of Family Practice.  
 David S. Hall, Ph.D. (U. Ky.), Associate Professor of Community Medicine.  
 John E. Hall, Ph.D. (Purdue U.), Professor of Microbiology.  
 Rodney L. Hall, M.D. (WVU), Clinical Assistant Professor of Anesthesiology.  
 Trevelyn F. Hall, II, M.D. (WVU), Clinical Professor of Otolaryngology.  
 William L. Hall, M.D. (WVU), Clinical Associate Professor of Medicine (Dermatology).  
 Eugenie B. Hamilton, Ph.D. (U. Va.), Adjunct Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
 George V. Hamrick, M.D. (U. Md.), Clinical Associate Professor of Ophthalmology.  
 John L. Hankinson, M.S. (Ga. Tech.), Adjunct Assistant Professor of Physiology.  
 Luther C. Hansbarger, M.D. (Med. C. Va.), Clinical Professor of Pediatrics and Community Medicine.  
 Orville P. Harbaugh, M.D. (U. Tex., San Antonio), Clinical Assistant Professor of Medicine (Comprehensive Medicine).  
 Ann M. Harms, B.S.N. (Marymount C.), Adjunct Instructor in Behavioral Medicine and Psychiatry, Charleston Division.  
 Harold H. Harper, M.S.Pharm. (WVU), Adjunct Assistant Professor of Community Medicine.  
 Charles L. Harris, Ph.D. (U. Ill.), Associate Professor of Biochemistry.  
 Marybeth Harris, M.S. (Med. C. Va.), Instructor in Physical Therapy.  
 William L. Harris, M.D. (WVU), Clinical Instructor in Family Practice.  
 Hollister S. Harrison, M.D. (Med. C. Va.), Clinical Professor of Pediatrics.  
 Dennis L. Hart, M.S. (U. New Haven), Assistant Professor of Physical Therapy.  
 John M. Hartman, M.D. (U. Md.), Clinical Associate Professor of Medicine (Comprehensive Medicine).  
 John B. Haslam, M.D. (Duke U.), Clinical Associate Professor of Radiology (Radiation Therapy).  
 Sherman E. Hatfield, M.D. (Med. C. Va.), Clinical Associate Professor of Otolaryngology.  
 Richard D. Hayes, M.D. (WVU), Clinical Instructor in Family Practice.  
 William Hayes, M.D. (Tulane U.), Clinical Associate Professor of Radiology (Diagnostic).  
 Richard J. Head, Ph.D. (Adelaide U.), Assistant Professor of Pharmacology and Toxicology.  
 George A. Hedge, Ph.D. (Stanford U.), Professor and Chairperson of Physiology.  
 Elwood H. Heilman, M.D. (U. Okla.), Clinical Assistant Professor of Orthopedic Surgery.  
 Peter L. Hein, M.D. (Georgetown U.), Professor of Behavioral Medicine and Psychiatry.  
 Terring W. Heironimus, III, M.D. (U. Va.), Professor of Anesthesiology.



Charles A. Heiskell, M.D. (Northwestern U.), Clinical Assistant Professor of Surgery.  
 Marta J. Henderson, M.S. (WVU), Associate Professor of Medical Technology.  
 Charles D. Hershey, M.D. (U. Mich.), Clinical Professor Emeritus of Surgery.  
 Robert D. Hess, M.D. (Med. C. Va.), Clinical Associate Professor of Family Practice.  
 Timothy B. Hetzer, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 Meyer R. Heyman, M.D. (U. Md.), Assistant Professor of Medicine (Hematology/Oncology) and Physician, University Health Service.  
 Robert W. Hibbard, M.D. (U. Tenn.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.  
 David P. Hill, M.D. (Duke U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Rusi A. Hilloowala, Ph.D. (U. Ala.), Associate Professor of Anatomy.  
 Henry M. Hills, M.D. (U. Iowa), Clinical Assistant Professor of Orthopedic Surgery.  
 Bette G. Hinton, M.D. (U. Louisville), Clinical Assistant Professor of Community Medicine and Family Practice.  
 David E. Hinton, Ph.D. (U. Miss.), Professor of Anatomy and Pathology.  
 George P. Hlusko, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry and Pediatrics, Charleston Division.  
 Florence K. Hoback, M.D. (U. Md.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Thomas Hodous, M.D. (Johns Hopkins U.), Adjunct Assistant Professor of Medicine (Pulmonary).  
 Donald H. Hofreuter, M.D. (Columbia U.), Clinical Assistant Professor of Family Practice.  
 Michael Hogan, M.D. (Albany Med. C.), Clinical Associate Professor of Radiology (Diagnostic).  
 Thomas B. Hokanson, M.D. (WVU), Clinical Instructor in Family Practice.  
 Charles D. Holland, M.S.H.A. (Northwestern U.), Adjunct Associate Professor of Community Medicine.  
 Fred Holt, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.  
 Jean Holter, B.S. (WVU), Assistant Professor of Medical Technology.  
 Sung Hak Hong, M.D. (Cath. Med. C.), Clinical Assistant Professor of Radiology (Diagnostic).  
 Thomas A. Horsman, M.D. (WVU), Clinical Assistant Professor of Medicine (Infectious Diseases).  
 Joseph A. Horton, M.D. (Tulane U.), Associate Professor of Radiology (Diagnostic).  
 Brian D. Houston, M.D. (WVU), Clinical Assistant Professor of Medicine (Rheumatology).  
 Logan W. Hovis, M.D. (U. Mich.), Clinical Assistant Professor of Anesthesiology.  
 Julie A. Howell, M.P.T. (Baylor U.) Clinical Instructor in Physical Therapy.  
 Peter A. Howland, M.D. (N.Y. Med. C.), Assistant Professor of Pediatrics.  
 Vera Hoylman-Ayoubi, M.D. (WVU), Clinical Associate Professor of Pediatrics.  
 Ellen E. Hrabovsky, M.D. (Vanderbilt U.), Associate Professor of Surgery and Pediatrics.  
 Francis Huber, M.D. (U. Tenn.), Clinical Assistant Professor of Anesthesiology.  
 Robert T. Humphries, M.D. (U. Va.), Clinical Assistant Professor Emeritus of Orthopedic Surgery.  
 Beatrice R. Hunter, M.S.W. (WVU), Clinical Instructor in Behavioral Medicine and Psychiatry.  
 John P. Hutton, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Richard M. Iammarino, M.D. (Stritch Sch. Med.), Professor of Pathology; Section Chief of Clinical Pathology.  
 Steven Inger, Ph.D. (Bowl. Grn. St. U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Barbara D. Ingersoll, Ph.D. (Penn St. U.), Associate Professor of Behavioral Medicine and Psychiatry.  
 Luna S. Iskander, M.B.B.Ch. (Cairo U.), Clinical Instructor in Pediatrics.  
 Rabindran Israel, M.B.B.S. (Stanley Med. C.), Clinical Associate Professor of Pediatrics.  
 Harry A. Jackson, M.D. (Med. C. Va.), Clinical Associate Professor of Medicine (Comprehensive Medicine).  
 John E. Jackson, M.D. (Temple U.), Clinical Professor of Family Practice.  
 Sidney B. Jackson, M.D. (WVU), Clinical Instructor in Family Practice.  
 Arthur R. Jacobson, M.D. (U. Tex.), Clinical Assistant Professor of Obstetrics and Gynecology.  
 Singanallur N. Jaggannathan, Ph.D. (U. Bombay), Associate Professor of Pathology and Biochemistry.  
 Abnash C. Jain, M.D. (Govt. Med. C., Patiala), Professor of Medicine; Section Chief of Cardiology.



Pushpa R. Jain, M.D. (Grant Med. C.), Assistant Professor of Radiology (Radiation Therapy).

Paul J. Jakubec, M.D. (U. Pitt), Clinical Professor of Pediatrics.

George W. Jaquiss, M.D. (U. Kans.), Clinical Associate Professor of Otolaryngology.

Joe N. Jarrett, M.D. (U. Penn), Clinical Professor of Family Practice.

Jesse J. Jenkins, III, M.D. (Johns Hopkins U.), Associate Professor of Pathology and Pediatrics.

Carl E. Johnson, M.D. (Northwestern U.), Clinical Associate Professor Emeritus of Medicine.

Jerome G. Johnson, M.D. (U. Minn.), Clinical Assistant Professor of Surgery.

Michael D. Johnson, Ph.D. (U. Mich.), Assistant Professor of Physiology.

Barbara Jones, M.D. (U. Utah), Professor and Associate Chairperson of Pediatrics.

David S. Jones, M.D. (Loyola U.), Ph.D. (U. Minn.), Professor Emeritus of Anatomy.

Douglas Jones, M.D. (Vanderbilt U.), Assistant Professor of Medicine, Charleston Division.

Eric T. Jones, M.D. (U. Mich.), Assistant Professor of Orthopedic Surgery.

John E. Jones, M.D. (U. Utah), Professor of Medicine (Metabolism-Endocrinology); Dean of the School of Medicine.

R. Mark Jones, M.D. (WVU), Clinical Instructor in Family Practice.

Steven J. Jubelirer, M.D. (U. Cinn.), Assistant Professor of Medicine, Charleston Division.

Donald B. Kameron, M.D. (Temple U.), Clinical Associate Professor of Otolaryngology.

Jeffrey A. Kahn, M.D. (U. Mich.), Clinical Assistant Professor of Pathology.

Denise T. Kalinowski, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).

Stanley J. Kandzari, M.D. (WVU), Professor of Urology.

David A. Kappel, M.D. (WVU), Clinical Associate Professor of Surgery.

Joseph Kassiss, M.D. (Damascus U.), Clinical Instructor in Urology.

Sam Katz, Ph.D. (Northwestern U.), Professor of Biochemistry.

Frank J. Keefer, M.D. (Geo. Wash. U.), Clinical Assistant Professor of Family Practice.

George M. Kellas, M.D. (U. Penn), Clinical Associate Professor of Family Practice.

Arthur E. Kelley, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

John F. Kelley, M.D. (McGill U.), Professor of Behavioral Medicine and Psychiatry, and Pediatrics.

John W. Kennard, M.D. (Bowman Gray Sch. Med.), Clinical Professor of Radiology (Diagnostic).

Roland Kennedy, M.D. (Ohio St. U.), Professor of Anesthesiology.

Elizabeth J. Kent, M.S.W. (WVU), Adjunct Instructor in Behavioral Medicine and Psychiatry, Charleston Division.

Robert D. Kerns, Ph.D. (U. Pitt), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

James W. Kessel, M.D. (WVU), Clinical Assistant Professor of Anesthesiology.

Henry L. Kettler, M.D. (WVU), Clinical Assistant Professor of Neurology.

Gordon Keyes, D.D.S. (U. Md.), Professor of Pathology.

Rashida A. Khakoo, M.D. (Makerere U.), Associate Professor of Medicine (Infectious Diseases).

Jamal H. Khan, M.B.B.S. (King Edward Med. C.), Clinical Associate Professor of Surgery.

Mohammad Z. Khan, M.B.B.S. (King Edward Med. C.), Clinical Associate Professor of Surgery.

Chung William Kim, M.D. (Kyung-pook Nat'l. U.), Clinical Assistant Professor of Surgery.

Jin-Chul Kim, M.D. (Med. C. Korea), Associate Professor of Radiology (Radiation Therapy).

Donald L. Kimmel, Ph.D. (U. Mich.), Professor Emeritus of Anatomy.

Phillip King, M.D. (Wash. U.), Clinical Assistant Professor of Radiology (Diagnostic).

Roger E. King, M.D. (WVU), Clinical Associate Professor of Surgery.

Steven A. King, M.D. (U. Md.), Assistant Professor of Behavioral Medicine and Psychiatry and Physician, University Health Service.

Billy E. Kirk, Ph.D. (Ohio St. U.), Associate Professor of Microbiology.

Richard Klabunde, Ph.D. (U. Ariz.), Assistant Professor of Physiology.

Richard E. Kleinmann, M.D. (U. Penn), Assistant Professor of Medicine, Charleston Division.

Rolf Kletzien, Ph.D. (U. Wisc.), Associate Professor of Biochemistry.

William G. Klingberg, M.D. (Wash. U., St. Lou.), Professor and Chairperson of Pediatrics.

Ronica M. Kluge, M.D. (U. Fla.), Professor of Medicine and Section Chief of Infectious Diseases.

Richard B. Knapp, M.D. (N.Y. Med. C.), Professor and Chairperson of Anesthesiology.

Thomas S. Knapp, M.D. (Jeff. Med. C.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Jehoon Peter Ko, M.D. (Korea U. Med. C.), Clinical Assistant Professor of Radiology (Diagnostic).

Jae Myung Koh, M.D. (Kyung-pook Nat'l. U.), Clinical Assistant Professor of Radiology.

Charles M. Koliner, M.D. (Columbia U.), Associate Professor of Anesthesiology and Medicine (Critical Care).

Martin J. Kommor, M.D. (U. S.C.), Associate Professor of Behavioral Medicine and Psychiatry and Section Chief, Charleston Division.

Richard E. Koon, M.D. (Duke U.), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Paul T. Kopczynski, M.S. (Case West. Res. U.), Adjunct Instructor in Community Medicine.

Donald M. Koppel, M.D. (U. Ill.), Clinical Associate Professor of Medicine (Hematology/Oncology).

Ray Koppelman, Ph.D. (U. Chicago), Professor of Biochemistry.

William Koss, M.D. (U. B. Aires), Assistant Professor of Pathology (Clinical).

Miroslav Kovacevich, M.D. (Med. Fac., U. Belgrade), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

John M. Krall, Ph.D. (U. Iowa), Professor of Community Medicine (Biostatistics).

Reginald F. Krause, Ph.D. (U. Rochester), M.D. (U. Vt.), Professor Emeritus of Biochemistry.

Donald W. Kress, M.D. (WVU), Clinical Assistant Professor of Surgery.

Chandra Mohan Kumar, M.B.B.S. (All-India Inst. Med. Sch.), Clinical Assistant Professor of Pediatrics.

Otto J. Kunst, M.D. (U. Miami), Clinical Assistant Professor of Radiology (Diagnostic).

Robert Kusminsky, M.D. (U. B. Aires), Assistant Professor of Surgery, Charleston Division.

David A. Labosky, M.D. (U. Penn.), Assistant Professor of Orthopedic Surgery.

Peter P. Ladewig, M.D. (U. Berlin), Clinical Professor Emeritus of Pathology.

Chi Whang Lai, Ph.D. (Purdue U.), Associate Professor of Radiology (Nuclear Medicine).

Marcel G. Lambrechts, M.D. (Louvaine), Clinical Assistant Professor of Pediatrics.

James L. Lane, M.D. (U. Pitt), Clinical Associate Professor of Urology.

Joyce Lanham, M.S. (U. N.C.), Clinical Instructor in Otolaryngology.

N. LeRoy Lapp, M.D. (Temple U.), Professor of Medicine and Section Chief of Pulmonary Medicine.

David J. Larkin, M.D. (WVU), Clinical Assistant Professor of Anesthesiology.

Norman J. Lass, Ph.D. (Purdue U.), Associate Professor of Otolaryngology.

Derrick L. Latos, M.D. (WVU), Clinical Associate Professor of Medicine (Nephrology).

Gary W. Lawrence, M.D. (Jeff. Med. C.), Clinical Assistant Professor of Pediatrics.

William E. Lawton, Jr., M.D. (U. Va.), Clinical Associate Professor of Surgery.

Robert L. Leadbetter, M.D. (WVU), Clinical Associate Professor of Surgery.

Jo S. Ledwell, Ph.D. (Ohio U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Alberto C. Lee, M.D. (U. Santo Tomas), Clinical Instructor in Medicine (Comprehensive Medicine).

Chi Meen Lee, M.D. (Kyung-pook U.), Clinical Assistant Professor of Urology.

Chuan Hsiang Lee, M.D. (St. John's U. Med. Sch.-China), Clinical Instructor in Community Medicine.

David P. Lee, M.D. (WVU), Clinical Associate Professor of Medicine (Hematology/Oncology).

Hans Lee, M.D. (Seoul Nat'l. U.), Clinical Assistant Professor of Surgery.

Ping Lee, Ph.D. (Duke U.), Professor of Physiology.

Johnsey L. Leef, M.D. (WVU), Clinical Assistant Professor of Radiology.

Rudolf K. Lempert, M.D. (U. Graz), Ph.D. (U. Upsala), Professor of Orthopedic Surgery.

Kenneth D. Lempert, M.D. (U. N.C.), Assistant Professor of Medicine (Nephrology).

Sidney C. Lerfald, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Warren D. Leslie, M.D. (Jeff. Med. C.), Clinical Associate Professor of Pediatrics.

Nigel R. Levens, Ph.D. (U. Southampton), Assistant Professor of Physiology.

Arnold J. Levine, Ph.D. (Columbia U.), Adjunct Professor of Behavioral Medicine and Psychiatry.

Robert A. Lewine, M.D. (U. Pitt), Clinical Associate Professor of Pediatrics.

Mary L. Lewis, M.D. (Emory U.), Clinical Professor of Medicine (Nephrology).

Michael J. Lewis, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*  
 Josiah K. Lilly, M.D. (WVU), *Clinical Associate Professor of Anesthesiology.*  
 Rogello T. Lim, M.D. (U. Santo Tomas), *Clinical Instructor in Medicine (Comprehensive Medicine).*  
 Romeo Y. Lim, M.D. (U. Philippines), *Clinical Associate Professor of Otolaryngology.*  
 David J. Lindert, M.D. (U. Ill.), *Clinical Assistant Professor of Urology.*  
 Harry T. Linger, M.D. (Med. C. Va.), *Clinical Instructor in Ophthalmology.*  
 Robert T. Linger, M.D. (Harvard U.), *Clinical Associate Professor of Surgery.*  
 John C. Linton, Ph.D. (Kent St. U.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Luis A. Loimil, M.D. (U. B. Aires), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Malcolm B. Loudon, M.D. (WVU), *Clinical Assistant Professor of Neurology.*  
 Betholene F. Love, Ed.D. (WVU), *Professor and Program Director/Education Coordinator of Medical Technology.*  
 Richard V. Lynch, M.D. (U. Penn), *Clinical Associate Professor of Medicine (Allergy and Clinical Immunology).*  
 Lloyd B. McCabe, M.D. (St. Lou. U.), *Clinical Associate Professor of Medicine (Pulmonary).*  
 Robert E. McCafferty, Ph.D. (U. Pitt), *Professor of Anatomy.*  
 Michael F. McCagh, M.D. (WVU), *Clinical Instructor in Medicine (Dermatology).*  
 William T. McClellan, M.D. (WVU), *Clinical Instructor in Urology.*  
 David C. McClure, M.D. (WVU), *Clinical Instructor in Ophthalmology.*  
 Kathleen A. McCluskey, Ph.D. (U. Kans.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 D. Verne McConnell, M.D. (Columbia U.), *Clinical Professor of Surgery.*  
 Lewis H. McConnell, M.D. (WVU), *Clinical Assistant Professor of Medicine (Allergy and Clinical Immunology).*  
 Arch T. McCoy, M.D. (Med. C. Va.), *Clinical Associate Professor of Urology.*  
 Bradford McCuskey, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Urology.*  
 Robert McCuskey, Ph.D. (Case West. Res. U.), *Professor and Chairperson of Anatomy.*  
 Donald E. McDowell, M.D. (Temple U.), *Clinical Professor of Surgery.*  
 Edward N. McIntosh, M.D. (Harvard U.), *Professor of Obstetrics and Gynecology and Medicine (Metabolism-Endocrinology).*  
 Brittain McJunkin, M.D. (WVU), *Clinical Assistant Professor of Medicine (Gastroenterology).*  
 Richard McKinley, M.D. (U. Iowa), *Clinical Assistant Professor of Obstetrics and Gynecology.*  
 William O. McMillan, M.D. (Duke U.), *Clinical Professor of Medicine (Gastroenterology).*  
 Michael D. McNeer, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Samuel P. McNeill, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*  
 Joseph J. McPhillips, Ph.D. (Jeff. Med. C.), *Adjunct Professor of Pharmacology and Toxicology.*  
 Austin J. McSweeney, Ph.D. (North. Ill. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Daniel MacCallum, M.D. (U. Ky.), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*  
 John P. MacCallum, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Kenneth G. MacDonald, M.D. (Cornell U.), *Clinical Associate Professor of Surgery.*  
 Alfred J. Magee, M.D. (Long Isl. C. Med.), *Clinical Associate Professor of Ophthalmology.*  
 Jamal E. Mahin, M.D. (Tehran Med. Sch.), *Assistant Professor of Pathology (Clinical).*  
 Daniel A. Mairs, M.D. (Duke U.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Tony C. Majestro, M.D. (WVU), *Clinical Associate Professor of Orthopedic Surgery.*  
 Indira Majumder, M.D. (S.C.B. Med. C.), *Clinical Instructor in Pediatrics.*  
 Paul F. Malone, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*  
 Sherry E. Maloney, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Evelyn W. Manetta, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Jimmie L. Mangus, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice.*  
 James W. Manier, M.D. (Vanderbilt U.), *Professor of Medicine and Section Chief of Gastroenterology.*  
 Eric P. Mantz, M.D. (WVU), *Clinical Assistant Professor of Surgery.*  
 Gary D. Marano, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 John B. Markey, M.D. (Med. C. Va.), *Clinical Associate Professor of Surgery.*  
 James P. Markham, M.D. (WVU), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*



Henrietta L. Marquis, M.D. (U. Penn), *Clinical Professor of Behavioral Medicine and Psychiatry*.

Robert Marshall, M.D. (Queen's U.), *Clinical Professor of Medicine (Cardiology)*.

James D. Martin, M.D. (Vanderbilt U.), *Professor of Neurology*.

Robert B. Martin, Ph.D. (WVU), *Associate Professor of Orthopedic Surgery*.

Robert W. Martin, M.D. (Hahnemann Med. C.), *Assistant Professor of Medicine (Behavioral and Ambulatory Medicine)*, and *Assistant Director, University Health Service*.

Orestes A. Martinez, M.D. (Fac. Med. San Fernando), *Associate Professor of Anesthesiology*.

Stanley S. Masilamani, M.D. (Stanley Med. C.), *Clinical Assistant Professor of Medicine (Gastroenterology)*.

Thomas Mathew, M.B.B.S. (Calicut Med. C.), *Clinical Assistant Professor of Anesthesiology*.

Phillip B. Mathias, M.D. (WVU), *Clinical Associate Professor of Otolaryngology*.

Michael G. Mawhinney, Ph.D. (WVU), *Professor of Urology and Pharmacology and Toxicology*.

Ward W. Maxson, M.D. (U. Mich.), *Clinical Associate Professor of Obstetrics and Gynecology*.

Victor E. Mazzocco, M.D. (WVU), *Clinical Assistant Professor of Medicine (Metabolism-Endocrinology)*.

Charles E. Meacci, M.S. (Boston U.), *Assistant Professor of Physical Therapy*.

Catalino B. Mendoza, Jr., M.D. (Manila Centr. U.), *Clinical Professor of Surgery*.

Henry F. Mengoli, Ph.D. (Cath. U. Am.), *Associate Professor of Microbiology*.

James A. Merchant, M.D. (U. Iowa), *Adjunct Associate Professor of Medicine (Pulmonary) and Community Medicine*.

John V. Merrifield, M.D. (WVU), *Clinical Assistant Professor of Family Practice*.

D. Franklin Milam, M.D. (U. Penn), *Professor and Chairperson of Urology*.

Philip R. Miles, Ph.D. (WVU), *Adjunct Professor of Physiology*.

Ronald J. Millecchia, Ph.D. (Rockefeller U.), *Associate Professor of Physiology*.

Lawrance S. Miller, M.D. (U. Va.), *Clinical Professor of Orthopedic Surgery*.

Michael Miller, Ph.D. (Penn St. U.), *Assistant Professor of Biochemistry*.

Phyllis Miller, M.S.W. (Purdue U.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division*.

Jovan Milutinovich, M.D. (Med. Fac. Zagreb), *Professor of Medicine and Section Chief of Nephrology*.

Anthony P. Minard, Cert. P.T. (U. Penn), *Clinical Instructor in Physical Therapy*.

Dane W. Moore, M.S. (WVU), *Professor of Medical Technology*.

Robert N. Moore, D.D.S. (Northwestern U.), Ph.D. (U. Rochester), *Associate Professor of Anatomy*.

Richard Moran, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy*.

Walter H. Moran, M.D. (Harvard U.), *Professor of Surgery and Physiology and Chief of Emergency Room*.

Michael Morehead, M.D. (WVU), *Clinical Associate Professor of Neurology*.

Barbara U. Morgan, M.D. (WVU), *Clinical Assistant Professor of Neurology and Pediatrics*.

David M. Morgan, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.

David Z. Morgan, M.D. (Med. C. Va.), *Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Associate Dean, School of Medicine (Student Affairs)*.

Edwin J. Morgan, M.D. (U. Pitt), *Professor of Medicine (Behavioral and Ambulatory Medicine) and Behavioral Medicine and Psychiatry; Medical Director, University Health Service*.

William C. Morgan, M.D. (U. Va.), *Clinical Professor of Otolaryngology*.

Winfield S. Morgan, M.D. (Temple U.), *Professor of Pathology*.

Joseph B. Moriarty, Ph.D. (Fordham U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.

Anthony P. Morise, Jr., M.D. (U. Vt.), *Assistant Professor of Medicine (Cardiology)*.

Joseph T. Morris, M.D. (Hahnemann Med. C.), *Clinical Associate Professor of Pediatrics*.

Abdolsamand Mossahebi, M.D. (U. Tehran), *Clinical Instructor in Pediatrics*.

Thomas W. Mou, M.D. (U. Rochester), *Professor of Community Medicine and Medicine (Comprehensive Medicine); Dean, Charleston Division*.

Prasadarao B. Mukkamala, M.B.B.S. (Rangaraya Med. C.), *Clinical Assistant Professor of Community Medicine*.

Martha K. Mullett, M.D. (WVU), *Associate Professor of Pediatrics*.

Phillip J. Murray, M.B.Ch.B. (U. Cape Town), Assistant Professor of Community Medicine.

David Z. Myerberg, M.D. (Columbia C.), Assistant Professor of Pediatrics.

Ganesan Nagarajan, M.D. (Stanley Med. C.), Clinical Assistant Professor of Radiology (Diagnostic).

Carlos A. Naranjo, M.D. (Med. C., Ecuador), Clinical Assistant Professor of Urology.

Phyllis Nash, M.S.W. (WVU), Instructor in Behavioral Medicine and Psychiatry.

LaRee D. Naviaux-D'Abreo, Ph.D. (Duquesne U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

William A. Neal, M.D. (WVU), Associate Professor of Pediatrics and Section Chief of Pediatric Cardiology.

Lee L. Neilan, M.D. (Georgetown U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Bruce N. Nelson, M.D. (WVU), Assistant Professor of Medicine (Comprehensive Medicine).

Charles T. Nelson, M.S. (WVU), Instructor in Otolaryngology.

William H. Nelson, Jr., M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry and Medicine (Behavioral and Ambulatory Medicine).

William R. Nelson, Ph.D. (U. Chicago), Associate Professor of Pathology (Clinical).

David Nesselroade, M.D. (WVU), Assistant Professor of Family Practice.

Ralph H. Nestmann, M.D. (Ind. U.), Clinical Associate Professor of Medicine (Comprehensive Medicine).

Benjamin Newman, M.D. (U. Beirut), Clinical Associate Professor of Family Practice.

Roger P. Nichols, M.D. (WVU), Clinical Associate Professor of Otolaryngology.

William E. Noble, M.D. (U. Pitt), Clinical Assistant Professor of Medicine, Wheeling Division.

William L. Noble, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).

G. Robert Nugent, M.D. (U. Cincin.), Professor and Chairperson of Neurological Surgery.

Milton E. Nugent, M.D. (Rush Med. C., U. Chicago), Clinical Assistant Professor of Ophthalmology.

Robert E. O'Connor, M.D. (Harvard U.), Clinical Associate Professor of Ophthalmology.

Morris H. O'Dell, M.D. (Med. C. Va.), Clinical Professor of Surgery.

Michael V. O'Keefe, M.D. (WVU), Assistant Professor of Medicine (Cardiology).

Stephen A. Olenchok, Ph.D. (WVU), Adjunct Assistant Professor of Microbiology.

Anthony J. Oliverio, M.D. (WVU), Clinical Associate Professor of Otolaryngology.

William W. Orr, Jr., M.D. (Med. C. Ga.), Assistant Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine).

R. Wade Ortel, M.D. (U. Md.), Professor of Medicine, Wheeling Division.

Dennis O. Overman, Ph.D. (U. Mich.), Associate Professor of Anatomy.

Bernadette R. Page, M.D. (Loyola-Stritch Sch. Med.), Clinical Assistant Professor of Surgery.

John R. Page, M.D. (Loyola-Stritch Sch. Med.), Clinical Assistant Professor of Surgery.

Albert Paine, M.D. (Med. C. Va.), Clinical Associate Professor of Otolaryngology.

Antonio Palladino, M.D. (U. Naples), Clinical Associate Professor of Obstetrics and Gynecology.

Jan E. Palmer, M.D. (SUNY), Assistant Professor of Family Practice and Physician, University Health Service.

Louis C. Palmer, M.D. (WVU), Clinical Associate Professor of Medicine (Dermatology).

Mahesh R. Pandya, M.B.B.S. (B. J. Med. C., India), Clinical Instructor in Medicine (Hematology/Oncology).

Joseph V. Panepinto, Ph.D. (WVU), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Ruth Panepinto, Ph.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Rizal V. Pangilinan, M.D. (Manila Centr. U.), Clinical Assistant Professor of Ophthalmology.

Undong Park, M.D. (Kyung-pook U.), Clinical Assistant Professor of Obstetrics and Gynecology.

William F. Park, M.D. (U. Md.), Clinical Assistant Professor of Ophthalmology.

Patrick J. Parks, Ph.D., M.D. (Case West. Res. U.), Clinical Assistant Professor of Pathology.

Nolan C. Parsons, M.D. (WVU), Clinical Assistant Professor of Medicine (Dermatology).

Richard S. Pataki, M.D. (N.Y. Med. C.), Clinical Assistant Professor of Pathology.

Robert Patchell, M.D. (U. Toronto), Clinical Professor of Obstetrics and Gynecology.

Amulakh M. Patel, M.D. (M. P. Shah Med. Sch.), Clinical Instructor in Surgery.

Mahendrakumbar M. Patel, M.D. (Med. C. Baroda), Clinical Assistant Professor of Medicine (Pulmonary).

Larry L. Patrick, M.D. (U. Ark.), Assistant Professor of Anesthesiology.

Joseph R. Patterson, M.D. (Tulane U.), Clinical Assistant Professor of Radiology (Diagnostic).

Denzil Patton, M.D. (WVU), Clinical Assistant Professor of Family Practice.

Ross M. Patton, M.D. (WVU), Clinical Instructor in Community Medicine.

Thompson E. Pearcy, M.D. (WVU), Instructor in Obstetrics and Gynecology, Charleston Division.

R. John C. Pearson, M.D. (Cambridge U.), Professor and Chairperson of Community Medicine and Professor of Family Practice.

Thomas S. Peck, M.D. (Geo. Wash. U.), Clinical Instructor in Family Practice.

Tom H. Pepper, M.D. (Baylor U.), Associate Professor of Behavioral Medicine and Psychiatry.

Terry R. Perrine, M.D. (Med. C. Va.), Assistant Professor of Family Practice, Charleston Division.

John J. Petronis, M.S. (WVU), Associate Professor of Physical Therapy.

Edward L. Petsonk, M.D. (McGill U.), Assistant Professor of Medicine (Pulmonary).

Alfred H. Pfister, M.D. (Ind. U.), Clinical Professor of Medicine (Comprehensive Medicine).

Ruth M. (Trotter) Phillips, M.D. (Johns Hopkins U.), Associate Professor of Pediatrics.

Justus C. Pickett, M.D. (Case West. Res. U.), Professor Emeritus of Orthopedic Surgery.

Carlin A. Pinkstaff, Ph.D. (Emory U.), Professor of Anatomy.

Betty S. Pittman, M.A. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Arthur L. Poffenbarger, M.D. (U. Md.), Clinical Professor of Neurology.

Robert B. Point, M.D. (U. Va.), Clinical Associate Professor of Medicine (Dermatology).

W. Warren Point, M.D. (Harvard U.), Professor and Assistant Chairperson of Medicine; Chief of Medicine, Charleston Division; Associate Dean, School of Medicine, Charleston Division.

Edward P. Polack, M.D. (WVU), Clinical Assistant Professor of Surgery.

Herbert H. Pomerance, M.D. (Columbia U.), Professor and Chief of Pediatrics, Charleston Division.

Charles D. Ponte, Pharm.D. (U. Utah), Assistant Professor of Family Practice.

Thomas R. Poole, M.D. (Med. C. Va.), Clinical Associate Professor of Obstetrics and Gynecology.

Robert Pope, Ph.D. (U. N. Dak.), Associate Professor of Anatomy.

Robert S. Pore, Ph.D. (UCLA), Associate Professor of Microbiology.

Alexius T. Portz, Ph.D. (U. Mich.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Thomas G. Potterfield, M.D. (Med. C. Va.), Clinical Professor of Pediatrics.

Jeffrey A. Powelson, B.S. (WVU), Clinical Instructor in Physical Therapy.

Roxann L. Powers, M.D. (WVU), Assistant Professor of Medicine (Comprehensive Medicine).

Lee H. Pratt, M.D. (WVU), Clinical Associate Professor of Neurology.

James M. Previll, M.D. (WVU), Clinical Assistant Professor of Medicine (Comprehensive Medicine).

Kathleen Previll, M.D. (WVU), Clinical Assistant Professor of Pediatrics.

Jack Pushkin, M.D. (WVU), Clinical Assistant Professor of Orthopedic Surgery.

Willard Pushkin, M.D. (Med. C. Va.), Clinical Professor Emeritus of Medicine.

Gina M. Puzzuoli, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Eugene A. Quarrick, Ph.D. (Syracuse U.), Professor of Behavioral Medicine and Psychiatry.

Eric L. Radin, M.D. (Harvard U.), Professor and Chairperson of Orthopedic Surgery.

Gary T. Raflo, M.D. (U. Va.), Assistant Professor of Ophthalmology.

Gale W. Rafter, Ph.D. (U. Wash.), Professor of Biochemistry.

Ahmad Rahbar, M.D. (U. Mich.), Clinical Associate Professor of Surgery.

Peter C. Raich, M.D. (U. Wisc.), Professor of Medicine and Section Chief of Hematology/Oncology.

Desingu Raja, M.B.B.S. (U. Madras), Clinical Assistant Professor of Orthopedic Surgery.

Arunthathie Rajaratham, M.B.B.S. (U. Ceylon), Clinical Assistant Professor of Anesthesiology.

Vadrevu Raju, M.B.B.S. (Andhira Med. C.), Associate Professor of Ophthalmology.

Humayun Rashid, M.B.B.S. (U. Panjab), Clinical Instructor in Surgery.



Richard C. Rashid, M.D. (WVU), *Clinical Associate Professor of Family Practice and Clinical Assistant Professor of Ophthalmology.*

Gerald A. Ravitz, M.D. (WVU), *Clinical Assistant Professor of Urology.*

Mark J. Reasor, Ph.D. (Johns Hopkins U.), *Associate Professor of Pharmacology and Toxicology.*

Keith A. Recht, M.D. (WVU), *Clinical Instructor in Urology.*

Robert W. Rectenwald, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*

Gurijala N. Reddy, M.B.B.S. (Kakatiya Med. C.), *Clinical Assistant Professor of Radiology (Radiation Therapy).*

Joseph B. Reed, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Robert J. Reed, M.D. (U. Penn.), *Clinical Assistant Professor of Surgery.*

Robert B. Reger, M.S. (WVU), *Adjunct Assistant Professor of Community Medicine.*

Frank D. Reilly, Ph.D. (U. Cincin.), *Associate Professor of Anatomy.*

Larry G. Reimer, M.D. (U. Colo.), *Assistant Professor of Pathology and Medicine (Infectious Diseases).*

Martin D. Reiter, M.D. (Jeff. Med. C.), *Clinical Professor of Medicine (Allergy and Clinical Immunology).*

Dorothy A. Renick, M.S.W. (WVU), *Adjunct Instructor in Behavioral Medicine and Psychiatry, Charleston Division.*

Ole W. Renick, M.D. (Med. C. Va.), *Clinical Assistant Professor of Otolaryngology.*

Joseph J. Renn, III, M.D. (WVU), *Associate Professor of Medicine (Pulmonary).*

Harold Resnick, Ph.D. (U. Iowa), *Adjunct Professor of Biochemistry.*

William C. Revercomb, M.D. (Columbia U.), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*

Randall W. Reyer, Ph.D. (Yale U.), *Professor of Anatomy.*

Joong Wye Rhee, M.D. (Seoul Nat'l. U.), *Clinical Assistant Professor of Pediatrics.*

Joe W. Rhudy, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*

Jack E. Riggs, M.D. (U. Rochester), *Assistant Professor of Neurology.*

Thomas L. Ritz, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Samuel K. Roberts, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Timothy G. Roberts, M.D. (So. Ill. U.), *Assistant Professor of Behavioral Medicine and Psychiatry.*

Patrick A. Robinson, M.D. (Wayne St. U.), *Assistant Professor of Medicine, Charleston Division.*

Robert L. Robinson, Ph.D. (U. Kans.), *Professor of Pharmacology and Toxicology.*

Joan Robison, Ph.D. (U. Ga.), *Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*

Satyabhilashi P. Rochlani, M.B.B.S. (U. Madras), *Associate Professor of Pathology.*

Jeanne A. Rodman, M.D. (U. Iowa), *Clinical Associate Professor of Anesthesiology.*

Nathaniel F. Rodman, M.D. (U. Penn.), *Professor and Chairperson of Pathology.*

Clinton L. Rogers, M.D. (U. Md.), *Clinical Associate Professor of Radiology (Diagnostic).*

John S. Rogers, M.D. (Geo. Wash. U.), *Associate Professor of Medicine (Hematology/Oncology).*

Mohammad Roidad, M.B.B.S. (Khyber Med. C., Peshawar U.), *Clinical Instructor in Medicine (Gastroenterology).*

Carl J. Roncaglione, M.D. (Med. C. Va.), *Clinical Professor of Orthopedic Surgery.*

Stanley G. Rosenblatt, M.D. (Jeff. Med. C.), *Clinical Assistant Professor of Radiology (Diagnostic).*

Jean D. Ross, M.D. (Harvard U.), *Associate Professor of Pediatrics, Charleston Division.*

William Rossman, M.D. (Ind. U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*

Ralph W. Ryan, M.D. (U. Mich.), *Clinical Professor of Ophthalmology.*

Robert S. Salisbury, M.D. (WVU), *Clinical Assistant Professor of Pathology.*

Ujjal S. Sandhu, M.B.B.S. (Calcutta Nat'l. Med. Inst.), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Michael A. Santer, M.D. (Georgetown U.), *Clinical Associate Professor of Medicine (Cardiology).*

David A. Santrock, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*

Darrell F. Saunders, M.D. (WVU), *Clinical Instructor in Medicine (Hematology/Oncology).*

Dennis F. Saver, M.D. (Med. C. Pa.), *Clinical Instructor in Family Practice.*

Paul D. Saville, M.D. (St. Geo. Med. Sch., London), *Clinical Professor of Medicine (Rheumatology).*

Ronald A. Savrin, M.D. (SUNY—Upstate), *Associate Professor of Surgery.*

John J. Schaefer, M.D. (N.Y. Med. C.), *Clinical Associate Professor of Surgery.*  
 Martin W. Schein, Sc.D. (Johns Hopkins U.), *Clinical Professor of Behavioral Medicine and Psychiatry.*  
 Franklin G. Schiebel, M.D. (U. Mex.), *Instructor in Anesthesiology and Neurological Surgery.*  
 Martin F. Scheinholtz, M.D. (Penn St. U.), *Clinical Assistant Professor of Anesthesiology.*  
 Sydney S. Schochet, Jr., M.D. (Tulane U.), *Professor of Pathology.*  
 Mark D. Schroeder, M.D. (U. Minn.), *Assistant Professor of Medicine (Comprehensive Medicine).*  
 Larry T. Schwab, M.D. (WVU), *Assistant Professor of Ophthalmology.*  
 Jeffrey K. Schwarz, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Ronald R. Scobbo, M.D. (WVU), *Clinical Associate Professor of Medicine (Comprehensive Medicine).*  
 Narinder N. Sehgal, M.B.B.S. (Panjab U., India), *Professor of Obstetrics and Gynecology and Chief of Obstetrics and Gynecology, Charleston Division.*  
 Richard J. Seime, Ph.D. (U. Minn.), *Associate Professor of Behavioral Medicine and Psychiatry.*  
 Harold Selinger, M.D. (N.Y. St. U. C. Med.), *Clinical Professor of Medicine (Cardiology).*  
 Martin J. Sepulveda, M.D. (Harvard U.), *Adjunct Instructor in Medicine (Pulmonary).*  
 Jose M. Serrato, M.D. (U. Nat'l. Colombia), *Clinical Assistant Professor of Urology.*  
 Edmund G. Settle, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 James K. Sexton, M.D. (Wake Forest U.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Samir Shabb, M.D. (Am. U. Beirut), *Clinical Associate Professor of Surgery.*  
 Tahir Shafii, M.B.B.S. (Nuhtar Med. C.), *Clinical Assistant Professor of Medicine (Nephrology).*  
 Stanley R. Shane, M.D. (U. Kans.), *Professor of Medicine; Section Chief of Metabolism and Endocrinology; Associate Chairperson, Department of Medicine.*  
 Harry L. Shannon, M.D. (Tulane U.), *Clinical Assistant Professor of Urology.*  
 Anne W. Sharpe, B.S. (WVU), *Assistant Professor of Medical Technology.*  
 George Shawkey, M.D. (Northwestern U.), *Clinical Associate Professor of Pediatrics.*  
 Thomas K. Shehan, D.V.M. (Ohio St. U.), *Associate Professor of Pathology and Coordinator of Comparative Pathology (Animal Quarters).*  
 Edwin M. Shepherd, M.D. (Cornell U.), *Clinical Associate Professor of Ophthalmology.*  
 William L. Shepherd, M.S. (Northwestern U.), *Clinical Assistant Professor of Community Medicine.*  
 Lauralee Sherwood, D.V.M. (Mich. St. U.), *Associate Professor of Physiology.*  
 Seyed Asadollah Shohadaei, M.D. (Tehran U.), *Associate Professor of Radiology (Diagnostic).*  
 Earle Shoub, B.S. (Poly. Inst. Brooklyn), *Adjunct Associate Professor of Anesthesiology.*  
 Jeffrey S. Shultz, M.D. (WVU), *Associate Professor of Medicine and Chief of Medicine, Wheeling Division.*  
 Richard H. Sibley, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Leslie Simmons, M.D. (Tulane U.), *Clinical Professor of Family Practice.*  
 William P. Sinclair, M.D. (Med. C. Va.), *Clinical Associate Professor of Family Practice.*  
 Wilbur Z. Sine, M.D. (WVU), *Clinical Assistant Professor of Family Practice and Behavioral Medicine and Psychiatry.*  
 Joseph T. Skaggs, M.D. (U. Louisville), *Clinical Professor of Medicine (Allergy and Clinical Immunology).*  
 John M. Slack, Ph.D. (U. Minn.), *Professor Emeritus of Microbiology.*  
 Stephen T. Slack, Ph.D. (Penn St. U.), *Associate Professor of Radiology and Section Chief of Radiation Safety.*  
 Clark K. Sleeth, M.D. (U. Chicago), *Professor Emeritus of Medicine and Family Practice.*  
 David H. Smith, M.D. (U. Alberta), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 David J. Smith, Ph.D. (WVU), *Professor of Anesthesiology and Pharmacology and Toxicology.*  
 James T. Smith, M.D. (U. Kans.), *Clinical Associate Professor of Radiology (Diagnostic).*  
 Larry C. Smith, M.D. (Med. C. Va.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Ralph S. Smith, M.D. (Northwestern U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Robert Leslie Smith, M.D. (U. Ill.), *Associate Professor and Assistant Chairperson of Community Medicine; Assistant Dean, School of Medicine (Continuing Education).*  
 George E. Snider, M.D. (WVU), *Clinical Instructor in Otolaryngology.*  
 Irvin S. Snyder, Ph.D. (U. Kans.), *Professor and Chairperson of Microbiology.*

Irvin M. Sopher, M.D. (U. Md.), *Clinical Professor of Pathology.*  
 William G. Sorenson, Ph.D. (U. Tex., Austin), *Adjunct Assistant Professor of Microbiology.*  
 Bradley A. Soule, M.D. (U. Vt.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Suzanne S. Souther, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 John Spadafore, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 James T. Spencer, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Otolaryngology.*  
 Wayne Spiggle, M.D. (Med. C. Va.), *Clinical Instructor in Medicine (Hematology/Oncology).*  
 Aaron Spital, M.D. (Med. C. Wisc.), *Assistant Professor of Medicine (Nephrology).*  
 Frederick Sporck, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Philip M. Sprinkle, M.D. (U. Va.), *Professor and Chairperson of Otolaryngology.*  
 David J. Srebalus, Ed.D. (Ind. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Charles Staab, M.D. (U. Pitt), *Clinical Assistant Professor of Pediatrics.*  
 Edwin P. Stabins, M.D. (Cornell U.), *Clinical Professor of Pediatrics.*  
 Michael Staggars, B.S.P.T. (WVU), *Clinical Instructor in Physical Therapy.*  
 Eugene L. Staples, M.H.A. (U. Minn.), *Clinical Professor of Community Medicine and Behavioral Medicine and Psychiatry; Administrator, University Hospital.*  
 Ellen F. Starkey, M.S. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
 William T. Stauber, Ph.D. (Rutgers U.), *Associate Professor of Physiology.*  
 Vilja K. Stein, M.D. (U. Penn), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Larry J. Stemple, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Margaret Stemple, M.D. (Rush Med. C., U. Chicago), *Clinical Assistant Professor of Family Practice.*  
 James M. Stevenson, M.D. (WVU), *Professor and Chairperson of Behavioral Medicine and Psychiatry; Professor of Medicine and Section Chief of Behavioral and Ambulatory Medicine.*  
 J. Clifford Stickney, Ph.D. (U. Minn.), *Professor Emeritus of Physiology.*  
 Robert E. Stitzel, Ph.D. (U. Minn.), *Professor and Associate Chairperson of Pharmacology and Toxicology.*  
 David A. Stoll, M.D. (U. Iowa), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Jerilyn Stone, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Robert E. Stone, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Eileen Storey, M.D. (Harvard U.), *Adjunct Assistant Professor of Medicine (Comprehensive Medicine).*  
 Wade B. Stoughton, M.D. (WVU), *Clinical Assistant Professor of Urology.*  
 Robert S. Strauch, M.D. (Case West. Res. U.), *Clinical Instructor in Surgery.*  
 William D. Strauch, M.D. (WVU), *Clinical Assistant Professor of Ophthalmology.*  
 Samuel A. Strickland, M.D. (WVU), *Clinical Assistant Professor of Ophthalmology.*  
 Neil Stronach, M.D. (Med. C. Va.), *Clinical Instructor in Otolaryngology.*  
 Ronald K. Stupar, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Jackie L. Summers, M.D. (WVU), *Clinical Professor of Urology.*  
 John A. Surmonte, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Surgery.*  
 Eduardo M. Suson, M.D. (Cebu Inst. Med.), *Clinical Assistant Professor of Surgery.*  
 Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), *Instructor in Pediatrics.*  
 David E. Swanson, M.D. (U. Wash.), *Assistant Professor of Ophthalmology.*  
 Marc A. Swanson, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Ronald A. Swanson, M.D. (U. Minn.), *Assistant Professor of Pathology.*  
 Dennis P. Sweeney, M.D. (U. Minn.), *Assistant Professor of Medicine (Gastroenterology).*  
 Sherri L. Swenson, B.S. (Ohio St. U.), *Clinical Instructor in Physical Therapy.*  
 Sally H. Swisher, M.D. (WVU), *Clinical Assistant Professor of Neurology.*  
 Zoltan Szalontay, M.D. (U. Zagreb), *Clinical Associate Professor of Radiology.*  
 Ellen Szega, M.D. (U. Montpellier—France), *Clinical Assistant Professor of Pediatrics.*  
 Ernesto Tanguilig, M.D. (U. Philippines), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Alan K. Tannenbaum, M.D. (U. Guadalajara—Mexico), *Assistant Professor of Medicine (Cardiology).*  
 Thomas J. Tarnay, M.D. (Columbia U.), *Professor of Surgery.*  
 Jamshia Tehranzadeh, M.D. (Pahlavi U.), *Assistant Professor of Radiology (Diagnostic).*  
 Mary Ellen Tekieli, Ph.D. (U. Okla.), *Clinical Assistant Professor of Otolaryngology.*  
 Erdogan Tercan, M.D. (Ankara U.), *Clinical Associate Professor of Anesthesiology.*  
 John A. Thomas, Ph.D. (St. U. Iowa), *Professor of Pharmacology and Toxicology; Associate Dean, School of Medicine (Administration).*



Herbert Thompson, Ph.D. (U. Kans.), Associate Professor and Assistant Chairperson of Microbiology.

Robert C. Thompson, M.D. (WVU), Clinical Instructor in Anesthesiology.

Stephen Thorngate, M.D. (Case-West. Res. U.), Clinical Associate Professor of Surgery.

Lawrence B. Thrush, Jr., M.D. (WVU), Assistant Professor of Medicine and Section Chief of Allergy and Clinical Immunology.

Lawrence B. Thrush, Sr., M.D. (U. Penn), Clinical Instructor in Surgery.

Peter K. Thrush, M.D., (WVU), Clinical Instructor in Orthopedic Surgery.

Louis W. Tinnin, M.D. (U. Chicago), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

George E. Toma, Jr., M.D. (Ohio St. U.), Clinical Assistant Professor of Ophthalmology.

Joseph B. Touma, M.D. (Damascus U.), Clinical Assistant Professor of Otolaryngology.

Shirley Willis Trammell, M.D. (Tulane U.), Clinical Assistant Professor of Surgery.

Donald C. Trapp, M.D. (Temple U.), Clinical Associate Professor of Urology.

John W. Traubert, M.D. (Ohio St. U.), Professor and Chairperson of Family Practice.

John W. Trenton, M.D. (U. Penn), Clinical Professor of Surgery.

Robert R. Trotter, M.D. (Temple U.), Professor Emeritus of Ophthalmology.

George P. Tryfiates, Ph.D. (Rutgers U.), Associate Professor of Biochemistry.

Kevin Kuen-Ching Tu, Ph.D. (Utah St. U.), Adjunct Assistant Professor of Pathology.

Pat A. Tuckwiller, M.D. (U. Chicago), Clinical Professor Emeritus of Medicine.

Christopher C. Tully, M.D. (Med. C. Va.), Professor Emeritus of Family Practice.

Irma H. Ullrich, M.D. (U. Minn.), Associate Professor of Medicine (Metabolism-Endocrinology) and Physician, University Health Service.

Isidro P. Uy, M.D. (U. Santo Tomas), Clinical Instructor in Pediatrics.

Albert M. Valentine, M.D. (WVU & Med. C. Va.), Clinical Associate Professor of Medicine (Cardiology).

Velayudhan Vallyathan, Ph.D. (Maharaja Satyriaroa U.), Adjunct Assistant Professor of Pathology.

Knox Van Dyke, Ph.D. (St. Louis U.), Professor of Pharmacology and Toxicology.

Carlos Vasquez, M.D. (U. Nacional), Clinical Assistant Professor of Medicine (Hematology/Oncology).

Angel Vasquez, M.D. (U. Puerto Rico), Professor of Family Practice and Pediatrics.

John S. Veach, M.D. (WVU), Assistant Professor of Surgery and Director of the Emergency Room.

Alfredo C. Velasquez, M.D. (U. Santo Tomas), Clinical Associate Professor of Surgery.

Robert W. Veltri, Ph.D. (WVU), Professor of Microbiology and Otolaryngology.

Richard J. Venjohn, Ph.D. (Purdue U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Purushattam L. Verma, M.D. (Nagpur U.), Clinical Assistant Professor of Pediatrics.

Herbert G. Voelz, Dr.Rer.Nat. (U. Greifswald, Ger.), Professor of Microbiology.

Edward Voss, Jr., M.D. (U. Buffalo), Clinical Associate Professor of Surgery.

Thomas G. Wack, M.D. (WVU), Clinical Instructor in Family Practice.

John A. Wade, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.

Gregory R. Wagner, M.D. (A. Einstein C. Med.), Clinical Instructor in Community Medicine.

Robert H. Waldman, M.D. (Wash. U., St. Louis), Professor and Chairperson of Medicine and Professor of Behavioral Medicine and Psychiatry.

Brian K. Walker, M.D. (Cornell U.), Associate Professor of Medicine (Hematology/Oncology), and Director of the Physician's Assistant Program.

David K. Walker, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Elizabeth R. Walker, Ph.D. (WVU), Associate Professor of Anatomy.

James H. Walker, M.D. (U. Md.), Clinical Professor of Surgery.

Albert L. Wanner, M.D. (U. Pitt), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Stephen D. Ward, M.D. (U. Pitt), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Herbert E. Warden, M.D. (U. Chicago), Ph.D. (U. Ill.), Professor of Surgery.

Carolyn S. Warren, M.D. (Case West. Res. U.), Clinical Assistant Professor of Family Practice and Medicine (Comprehensive Medicine).

Stafford G. Warren, M.D. (U. Rochester), Clinical Professor of Medicine (Cardiology).

Thomas L. Warren, M.D. (WVU), Instructor in Anesthesiology.

Alvin L. Watne, M.D. (U. Ill.), Professor and Chairperson of Surgery and Professor of Behavioral Medicine and Psychiatry.

Carol J. Weaver, M.S. (U. Mo.—KC), Associate Professor of Physical Therapy.

Deleno Webb, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Kenneth C. Weber, Ph.D. (U. Minn.), Adjunct Professor of Physiology.  
 Harry S. Weeks, Jr., M.D. (U. Md.), Clinical Professor of Anesthesiology.  
 George W. Weinstein, M.D. (SUNY), Professor and Chairperson of Ophthalmology.  
 Charles C. Weise, M.D. (U. Penn), Clinical Associate Professor of Behavioral Medicine and Psychiatry.  
 Roland J. Weisser, Jr., M.D. (WVU), Associate Professor of Family Practice.  
 William A. Welton, M.D. (U. Md.), Professor of Medicine and Section Chief of Dermatology.  
 Theodore P. Werblin, M.D. (NYU), Clinical Assistant Professor of Ophthalmology.  
 David P. Westfall, Ph.D. (WVU), Professor of Pharmacology and Toxicology.  
 Robert T. Westmoreland, M.D. (Bowman Gray Sch. Med.), Clinical Assistant Professor of Anesthesiology.  
 Edward R. Wheatley, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 Charles E. Whitaker, M.D. (U. Pitt), Clinical Associate Professor of Otolaryngology.  
 Kenneth L. Wible, M.D. (Jeff. Med. C.), Associate Professor of Pediatrics.  
 Daniel Wierda, Ph.D. (U. Kans.), Assistant Professor of Pharmacology and Toxicology.  
 David W. Wilder, M.D. (U. Ore.), Clinical Associate Professor of Radiology (Diagnostic).  
 Isiah A. Wiles, M.D. (U. Chi.), Clinical Associate Professor Emeritus of Community Medicine.  
 James H. Wiley, M.D. (Med. C. Va.), Clinical Professor of Orthopedic Surgery.  
 Ronald L. Wilkinson, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.  
 David H. Williams, M.D. (Cornell U.), Clinical Associate Professor of Radiology (Diagnostic).  
 Patricia W. Williams, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Patrick C. Williams, M.D. (Med. C. Va.), Clinical Associate Professor of Obstetrics and Gynecology.  
 T. Walley Williams, Ph.D. (U. Pitt), Professor Emeritus of Anatomy.  
 Robert S. Wilson, M.D. (Johns Hopkins U.), Clinical Assistant Professor of Orthopedic Surgery.  
 Mary J. Wimmer, Ph.D. (U. N.C.), Assistant Professor of Biochemistry.  
 Mosley H. Winkler, M.D. (Med. C. Va.), Clinical Associate Professor of Ophthalmology.  
 George H. Wirtz, Ph.D. (Geo. Wash. U.), Professor of Biochemistry.  
 Richard C. Wisman, M.D. (WVU), Instructor in Surgery (Emergency Room).  
 David J. Withersty, M.D. (WVU), Clinical Professor of Behavioral Medicine and Psychiatry.  
 Loraine Withersty, M.D. (WVU), Clinical Assistant Professor of Obstetrics and Gynecology.  
 Kathleen Withrow, B.S. (Loma Linda U.), Clinical Instructor in Physical Therapy.  
 Myron L. Wolbarsht, Ph.D. (Johns Hopkins U.), Adjunct Professor of Ophthalmology.  
 John J. Wolf, Jr., M.D. (Wake Forest U.), Clinical Assistant Professor of Pediatrics.  
 Diane T. Woodrum, Ed.D. (WVU), Adjunct Assistant Professor of Pediatrics.  
 Donald F. Wuori, M.D. (SUNY—Downstate), Associate Professor of Pediatrics.  
 William D. Wyant, M.S.E., M.P.A. (WVU), Assistant Professor of Community Medicine.  
 Merrill Wymer, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 David B. Yelton, Ph.D. (U. Mass.), Associate Professor of Microbiology.  
 Jeffrey M. Yost, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 George L. Zaldivar, M.D. (WVU), Clinical Associate Professor of Medicine (Pulmonary).  
 John J. Zarski, Ph.D. (Ohio U.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.  
 Frank G. Zavisca, M.D. (SUNY—Buffalo), Ph.D. (MIT), Assistant Professor of Anesthesiology.  
 John F. Zeedick, M.D. (U. Pitt), Clinical Professor of Anesthesiology.  
 Steve M. Zekan, M.D. (WVU), Instructor in Surgery, Charleston Division.  
 Barry L. Zimmerman, M.D. (Penn St. U.), Associate Professor of Anesthesiology.  
 Bernard Zimmermann, M.D. (Harvard U.), Ph.D. (U. Minn.), Professor of Surgery.

## School of Nursing

Brenda Kay Battles, R.N., M.S. (Tex. Wom. U.), Instructor.  
 Shirley K. Bell, R.N., M.S.N. (Wayne St. U.), Associate Professor.  
 Joan L. Bilitski, R.N., M.S.N. (WVU), Instructor.  
 Mary Frances Borgman, R.N., Ed.D. (WVU), Professor.  
 Mary Jo Butler, R.N., M.S. (U. Md.), Assistant Professor; Chairperson, Charleston Unit.  
 Marie E. Caruso, R.N., M.S. (U. Ariz.), Instructor.  
 Doris K. Clearago, R.N., M.S. (U. Ariz.), Assistant Professor.

Mona M. Counts, R.N., Ph.D. (U. Tex.), *Associate Professor*.  
 Pamela M. Deiriggi, R.N., M.S.N. (WVU), *Instructor*.  
 Patricia A. Diehl, R.N., M.A. (WVU), *Associate Professor*.  
 O. B. Fawley, M.S.W. (WVU), *Adjunct Instructor*.  
 Imogene P. Foster, R.N., M.A. (WVU), *Assistant Professor*.  
 Susanna M. Gareis-McLain, R.N., M.S.N. (Boston C.), *Instructor*.  
 Sharron F. Graham, R.N., M.S. (U. Penn), *Assistant Professor*.  
 Suzanne W. Gross, R.N., M.N.Ed. (U. Pitt), *Assistant Professor; Chairperson, Junior Unit*.  
 Barbara Guthrie, R.N., M.S. (U. Md.), *Instructor*.  
 Debra L. Harr, R.N., M.P.H. (J. Hopkins U.), *Assistant Professor*.  
 Kathleen Heverley, R.N., M.S. (Boston U.), *Instructor*.  
 Jean M. Hoff, R.N., M.P.H. (U. Pitt), *Associate Professor; Assistant Dean*.  
 Joan R. Howard, R.N., M.S.N. (U. Penn), *Associate Professor*.  
 Mary Gail Jacobson, R.N., M.S.N. (Tex. Wom. U.), *Assistant Professor*.  
 Lorita D. Jenab, R.N., Ed.D. (Columbia U.), *Professor and Dean*.  
 Dorothy M. B. Johnson, R.N., M.S. (U. Cal., SF), *Assistant Professor; Chairperson, Senior Unit*.  
 Patricia A. Johnston, R.N., M.S.N. (Ohio St. U.), *Instructor, Charleston Unit*.  
 Judith C. Kandzari, R.N., M.A. (WVU), *Assistant Professor*.  
 Nancy A. Koontz, R.N., M.S.N. (U. Md.), *Associate Professor*.  
 Gaynelle McKinney, R.N., M.S.N.Ed. (Ind. U.), *Professor; Chairperson, Continuing Education*.  
 Margaret A. Marcinek, R.N., M.S. (U. Md.), *Associate Professor*.  
 Kathleen H. Marsland, R.N., M.S. (U. Colo.), *Assistant Professor*.  
 W. Annette Massey, R.N., M.S.N. (Yale U.), *Associate Professor*.  
 Karen E. Miles, R.N., M.S.N. (WVU), *Assistant Professor*.  
 Victoria L. Miller, R.N., M.S.N. (U. Minn.), *Assistant Professor; Chairperson, Sophomore Unit*.  
 Virginia Miller, R.N., M.S.N. (WVU), *Instructor*.  
 Marsha F. Mitchell, R.N., M.S.N. (WVU), *Instructor*.  
 Rita S. Monohan, R.N., M.S.N. (Duke U.), *Instructor*.  
 Cynthia A. Neely, R.N., M.S. (WVU), *Instructor, Charleston Unit*.  
 Ruth Wilson O'Brien, R.N., M.N.Ed. (U. Pitt), *Assistant Professor*.  
 Lois O'Kelley, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.  
 Sarah H. Ortenzio, R.N., M.S. (U. Md.), *Instructor*.  
 C. Lynne Ostrow, R.N., M.S. (U. Cal., SF), *Assistant Professor*.  
 Carol M. Patton, R.N., M.S.N. (WVU), *Instructor*.  
 Marjorie R. Phillips, R.N., M.N.Ed. (U. Pitt), *Assistant Professor*.  
 Luz S. Porter, R.N., Ph.D. (NYU), *Professor; Chairperson, Graduate Unit*.  
 Jacqueline W. Riley, R.N., M.N. (U. Fla.), *Assistant Professor*.  
 Anne M. Rockenstein, R.N., M.S.N.Ed. (Cath. U. Am.), *Associate Professor*.  
 Kathleen Schoonover, R.N., M.S.N. (WVU), *Instructor, Charleston Unit*.  
 Jane A. Shrewsbury, R.N., M.N.Ed. (U. Pitt), *Associate Professor*.  
 Jolene M. Simon, R.N., M.N.Ed. (U. Pitt), *Instructor*.  
 Patricia A. Simoni, R.N., M.S.N. (WVU), *Instructor*.  
 Mary Jane Smith, R.N., Ph.D. (NYU), *Professor*.  
 Frances G. Snodgrass, R.N., M.A. (WVU), *Instructor, Charleston Unit*.  
 Natalie M. Stafford, R.N., M.N. (U. Pitt), *Associate Professor*.  
 Jacqueline Stemple, R.N., Ed.D. (WVU), *Associate Professor*.  
 Fredona E. Stenger, R.N., M.S.N. (Boston U.), *Associate Professor*.  
 Margaret Z. Taylor, R.N., M.N.Ed. (U. Pitt), *Associate Professor*.  
 Sheila R. Truby, R.N., M.S. (U. Idaho), *Instructor, Charleston Unit*.  
 Janet F. Wang, R.N., Ph.D. (U. Pitt), *Assistant Professor*.  
 Beverley Zinn, R.N., M.S.N. (WVU), *Instructor*.

## School of Pharmacy

Marie A. Abate, Pharm.D. (U. Mich.), *Assistant Professor of Clinical Pharmacy; Assistant Director, Drug Information Center*.  
 C. Bruce Alderman, B.S. (WVU), *Clinical Instructor*.  
 Scot A. Anderson, B.S. (WVU), *Clinical Instructor*.  
 Louis J. Anile, B.S. (Duquesne U.), *Clinical Instructor*.  
 Irma M. Anido, B.S. (WVU), *Instructor in Pharmacy*.  
 Julia Bailey, B.S. (WVU), *Clinical Instructor*.  
 H. John Baldwin, Ph.D. (Purdue U.), *Professor of Behavioral and Administrative Pharmacy; Chairperson, Behavioral and Administrative Pharmacy*.



James D. Bartsch, B.S. (U. Wisc.), *Clinical Instructor.*  
 Jerry A. Bovenizer, B.S. (WVU), *Clinical Instructor.*  
 N. S. Bovenizer, B.S. (Ohio North. U.), *Clinical Instructor.*  
 Calvin C. Brister, Ph.D. (U. Miss.), *Associate Professor of Biopharmacy.*  
 James A. Calemine, B.S. (WVU), *Clinical Instructor.*  
 Mary Ann Capito, B.S. (WVU), *Clinical Instructor.*  
 David M. Caplan, B.S. (WVU), *Clinical Instructor.*  
 L. Louis Carter, B.S. (WVU), *Clinical Instructor.*  
 James K. Coleman, B.S. (WVU), *Clinical Instructor.*  
 John E. Corkrean, B.S. (WVU), *Clinical Instructor.*  
 Timothy R. Covington, Pharm.D. (U. Mich.), *Associate Professor of Clinical Pharmacy;*  
*Chairperson, Clinical Pharmacy Programs.*  
 Stephen D. Crawford, B.S. (WVU), *Clinical Instructor.*  
 R. Scott Criss, B.S. (WVU), *Clinical Instructor.*  
 S. A. Cunningham, C.P.A., B.S. (WVU), *Adjunct Assistant Professor of Pharmacy*  
*Administration.*  
 Mary E. Davis, Ph.D. (Mich. St. U.), *Assistant Professor of Pharmacology.*  
 Robert Davis, B.S. (WVU), *Clinical Instructor.*  
 David L. Day, M.S. (WVU), *Clinical Instructor.*  
 Lou DeBone, B.S. (Duquesne U.), *Clinical Instructor.*  
 James J. Doyle, B.S. (WVU), *Clinical Instructor.*  
 John J. Egan, B.S. (WVU), *Clinical Instructor.*  
 Robert Flanagan, B.S. (U. Cincin.), *Clinical Instructor.*  
 Jack E. Fruth, B.S. (Ohio St. U.), *Clinical Instructor.*  
 Patricia E. Fylstra, B.S. (Purdue U.), *Clinical Instructor.*  
 Barbara J. Gastineau, B.S. (WVU), *Clinical Instructor.*  
 Kenneth H. Gianettino, B.S. (WVU), *Clinical Instructor.*  
 Douglas L. Gill, B.S. (WVU), *Lecturer in Pharmacy; Coordinator of Externship Program.*  
 Douglas Glover, M.D. (Emory U.), *Adjunct Associate Professor.*  
 Harry A. Goodykoontz, B.S. (WVU), *Clinical Instructor.*  
 Bonnie S. Grabowski, B.S. (U. Nebr.), *Clinical Instructor.*  
 Gwendolyn S. Grant, B.S. (Duquesne U.), *Clinical Instructor.*  
 Willard S. Griffith, B.S. (Cincin. C. Pharm.), *Clinical Instructor.*  
 John W. Griffiths, B.S. (Ohio St. U.), *Clinical Instructor.*  
 Harold H. Harper, M.S. (WVU), *Adjunct Assistant Professor of Pharmacy*  
*Administration.*  
 Robert E. Hickman, B.S. (U. Cincin.), *Clinical Instructor.*  
 Donald M. Hilligoss, Pharm.D. (Phila. C. Pharm.), *Clinical Assistant Professor;*  
*Director, Pharmacokinetics Service, Charleston Area Medical Center.*  
 L. Dean Holmes, B.S. (WVU), *Clinical Instructor.*  
 Stephen A. Howard, Ph.D. (U. Mich.), *Associate Professor of Pharmacy.*  
 Robert H. Hoy, Pharm.D. (U. Cal.), *Assistant Professor of Clinical Pharmacy;*  
*Vice-Chairperson, Clinical Programs, Charleston Division.*  
 Arthur I. Jacknowitz, Pharm.D. (Phila. C. Pharm.), *Associate Professor of Clinical*  
*Pharmacy; Director, Drug Information Center.*  
 Richard Jarvis, B.S. (WVU), *Clinical Instructor.*  
 Robert Johnson, B.S. (U. Iowa), *Clinical Instructor.*  
 Patricia Johnston, B.S. (WVU), *Clinical Instructor.*  
 Deborah B. Jones, B.S. (WVU), *Clinical Instructor.*  
 Ronald Jones, B.S. (WVU), *Clinical Instructor.*  
 Francis Judy, B.S. (WVU), *Clinical Instructor.*  
 Steven Judy, B.S. (WVU), *Clinical Instructor.*  
 Guy Lang, B.S. (WVU), *Clinical Instructor.*  
 James Kai-Jin Lim, Ph.D. (U. N.C.), *Professor of Pharmaceutics.*  
 Robert T. Lindsay, M.S. (Mass. C. Pharm.), *Clinical Instructor.*  
 John F. Logan, B.S. (WVU), *Clinical Instructor.*  
 Robert B. Lowe, Pharm.D. (U. Mich.), *Clinical Associate Professor.*  
 Daniel Lusk, B.S. (WVU), *Clinical Instructor.*  
 Joseph K. H. Ma, Ph.D. (Duquesne U.), *Associate Professor of Medicinal Chemistry.*  
 Carl J. Malanga, Ph.D. (Fordham U.), *Professor of Biopharmacy; Chairperson, Basic*  
*Pharmaceutical Sciences.*  
 Mary Lou Malanga, B.S. (Fordham U.), *Clinical Instructor.*  
 Carroll Martin, B.S. (WVU), *Clinical Instructor.*  
 Robert H. Matheny, B.S. (WVU), *Clinical Instructor.*  
 John W. Mauger, Ph.D. (U. R.I.), *Professor of Pharmacy; Coordinator, Graduate*  
*Program.*

Kenneth F. McNeil, M.S. (U. S. Calif.), *Clinical Assistant Professor*.  
 Ronald W. Meredith, B.S. (WVU), *Clinical Instructor*.  
 Vernon R. Midcap, B.S. (WVU), *Clinical Assistant Instructor*.  
 Sylvia Miles, Pharm.D. (Med. U. S.C.), *Clinical Assistant Professor*.  
 John E. Miller, B.S. (WVU), *Clinical Instructor*.  
 Richard P. Miller, Ph.D. (U. Iowa), *Associate Professor of Biopharmaceutics*.  
 Kenneth Muha, B.S. (U. Ga.), *Clinical Instructor*.  
 Frank D. O'Connell, Ph.D. (Purdue U.), *Professor of Pharmacognosy; Assistant Dean*.  
 John P. O'Donnell, Ph.D. (U. Iowa), *Associate Professor of Medicinal Chemistry*.  
 Janna G. Ott, B.S. (Purdue U.), *Clinical Instructor; Director, Prescription Pharmacy Services*.  
 Rebecca J. Pawlak, B.S. (WVU), *Clinical Instructor*.  
 Robert B. Pierce, B.S. (WVU), *Clinical Instructor*.  
 John P. Plummer, B.S. (WVU), *Clinical Instructor*.  
 William Plyburn, B.S. (U. Cincin.), *Clinical Instructor*.  
 Charles D. Ponte, Pharm.D. (U. Utah), *Assistant Professor of Clinical Pharmacy*.  
 Terrence S. Prettyman, B.S. (WVU), *Clinical Assistant Professor*.  
 Woodrow J. Proveaux, Pharm.D. (U. Mich.), *Assistant Professor of Clinical Pharmacy*.  
 David A. Riley, Ed.D. (U. Ga.), *Associate Professor of Behavioral and Administrative Pharmacy; Coordinator of Continuing Education*.  
 Paul Ritchie, B.S. (WVU), *Clinical Instructor*.  
 Randall K. Robinson, B.S. (U. Ky.), *Clinical Instructor*.  
 Sidney A. Rosenbluth, Ph.D. (U. Tex.), *Professor; Dean*.  
 Harry Scott, B.S. (WVU), *Clinical Instructor*.  
 Kathryn Sensabaugh, B.S. (WVU), *Lecturer in Clinical Pharmacy*.  
 A. Ray Shaw, B.S. (WVU), *Clinical Instructor*.  
 Clara Fay G. Skarzenski, B.S. (WVU), *Instructor in Pharmacy*.  
 Maynard Slaven, B.S. (WVU), *Clinical Instructor*.  
 Everett B. Stanley, B.S. (WVU), *Clinical Instructor*.  
 Robert Stout, B.S. (WVU), *Clinical Instructor*.  
 Eugene S. Stratford, Ph.D. (Ohio St. U.), *Associate Professor of Medicinal Chemistry*.  
 Basil G. Swisher, M.S. (WVU), *Adjunct Instructor in Pharmacy Administration*.  
 Robert H. Taylor, B.S. (WVU), *Clinical Instructor*.  
 Edward A. Toompas, B.S. (WVU), *Clinical Instructor*.  
 Charles Turk, B.S. (WVU), *Clinical Instructor*.  
 Irvin VanMeter, B.S. (WVU), *Clinical Instructor*.  
 Debra L. Warden, B.S. (WVU), *Clinical Instructor*.  
 Patricia A. Weaver, B.S. (Duquesne U.), *Clinical Instructor*.  
 Albert F. Wojcik, Ph.D. (U. Pitt), *Professor of Pharmacy Administration; Coordinator, Alumni Affairs*.  
 Fred L. Zicafoose, B.S. (WVU), *Clinical Instructor*.  
 John F. Ziolkowski, M.S. (Brooklyn C. Pharm.), *Clinical Instructor*.

## Medical Center Staff

Marguerite E. Abel, B.S.L.S. (U. Ill.), *Assistant Librarian.*  
John Ambrose, *Superintendent, Maintenance.*  
Maureen Conley, M.S.L.S. (U. Pitt), *Network Librarian.*  
Elizabeth S. Furfari, B.S.J. (WVU), *Information Officer.*  
Barbara L. Gould, M.A. (J. Hopkins U.), *Supervisor, Medical Illustration.*  
Harold H. Harper, M.S. (WVU), *Assistant to Vice-President—Health Sciences.*  
Linda M. Jacknowitz, M.S.L.S. (SUNY), *Audiovisual Librarian.*  
Lee E. McIntyre, *Supervisor, Electronics Laboratory.*  
J. Allyson McKee, M.S.L.S. (U. Pitt), *Technical Services Librarian.*  
Fred S. Marstiller, *Supervisor, Audiovisual Television.*  
Robert L. Murphy, M.S.L.S. (Cath. U. Am.), *Director, Medical Center Learning Resources Center.*  
Irene J. Roby, *Assistant to Dean, Admissions and Records.*  
J. Richard Toren, B.S.J. (WVU), *Associate Director, Public Affairs/Medical Center News Service.*  
Mary Ellin Wylie, B.A. (WVU), *Information Officer.*

## University Hospital

Eugene L. Staples, M.H.A. (U. Minn.), *Administrator.*  
Charles E. Flink, M.B.A. (WVU), *Associate Administrator.*  
Harold J. Shamberger, M.P.A. (Wayne St. U.), *Associate Administrator.*  
Bernard G. Westfall, M.B.A. (WVU), *Associate Administrator.*  
Michael J. Stein, M.H.A. (Duke U.), *Assistant Administrator.*  
Anna Moson, M.Litt. (U. Pitt), *Director, Nursing Service.*  
Virginia H. Nugent, *Administrative Assistant.*  
Helen M. Dorohovich, *Director of Volunteers.*  
Pamela C. Shier, M.Div. (Episcopal Div. Sch., Mass.), *Hospital Chaplain.*

## Department Heads

*Clinical Laboratories*, Richard M. Iammarino, M.D. (Loyola U., Chi.)  
*Dietary*, Margaret P. Abbott, M.P.H. (U. Minn.)  
*Hospital Computer Systems*, Robert R. Smith  
*Housekeeping/Laundry*, Marc Connelly  
*Medical Records*, Jeffrey M. Stull, B.A. (WVU)  
*Nursing Service*, Kathleen A. Moore, B.S. (Alderson-Broadbent C.), *Associate Director*;  
Joan Berry, R.N., and Jaretta Faust, R.N., *Assistant Directors*  
*Pathology*, Nathaniel F. Rodman, M.D. (U. Penn)  
*Pharmacy*, Sylvia Miles, Pharm.D. (Med. U. S.C.)  
*Physical Therapy*, Sandy C. Burkhart, Ph.D. (WVU)  
*Radiology*, Orlando F. Gabriele, M.D. (Yale U.)  
*Social Service*, Don E. Killen, M.S.W. (U. Pitt)  
*Student Health Service*, Edwin J. Morgan, M.D. (U. Pitt)

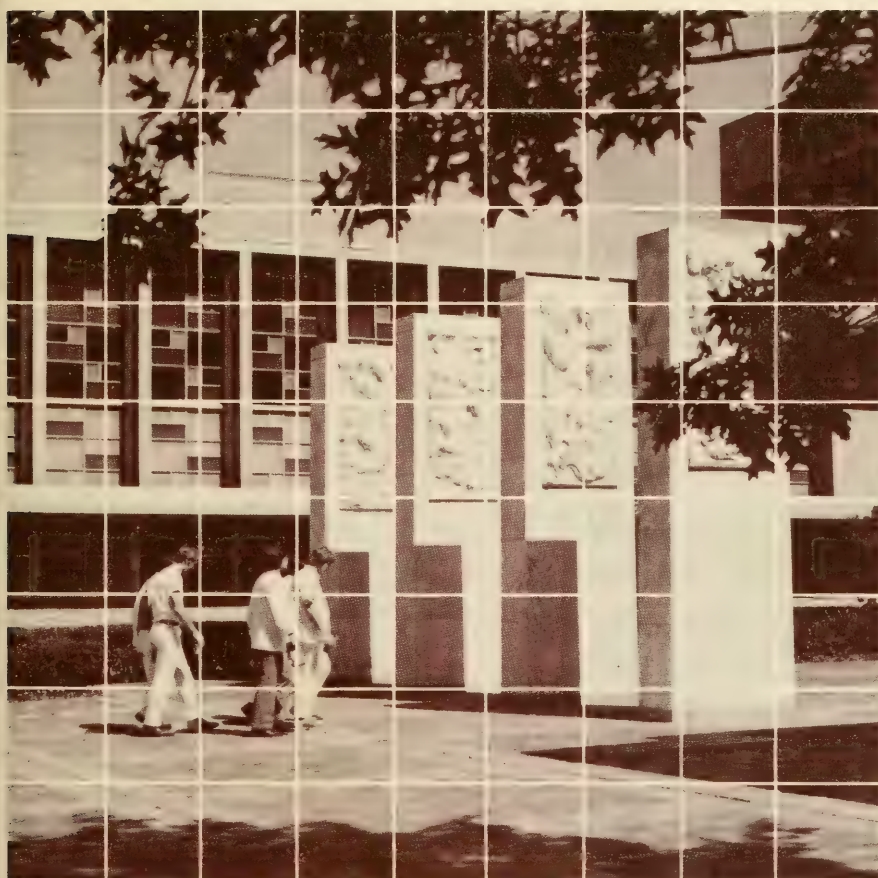


---

1982-83 Medical Center Catalog  
West Virginia University  
Office of Admissions and Records  
Morgantown, WV 26506

West Virginia University Bulletin  
(USPS 676-980 ISSN 0362-3009)  
Second Class Postage Paid at  
Morgantown, WV 26505

# MEDICAL CENTER CATALOG



**COVER**—Sculptured pylons in front of the Basic Sciences Building depict milestones in the health sciences.



WVU Medical Center—Basic Sciences Building (left); University Hospital (right).



Neonatal ICU, Pediatrics.



Open-heart surgery.



# **West Virginia University Medical Center 1983-84 Catalog**

---

## **Medical Center Basic Sciences School of Dentistry**

**Dental Hygiene**

## **School of Medicine**

**Medical Technology**

**Physical Therapy**

## **School of Nursing**

## **School of Pharmacy**

Edited by Stanley J. Nels  
*Associate University Editor*

The 1983-84 West Virginia University Medical Center Catalog is a general source of information about course offerings, academic programs and requirements, expenses, rules, and policies. The courses, requirements, and regulations contained herein are subject to continuing review and change by the West Virginia Board of Regents, University administrators, and the faculties of schools and colleges to best meet the goals and objectives of the University. The University, therefore, reserves the right to change, delete, supplement or otherwise amend at any time the information, course offerings, requirements, rules, and policies contained herein without prior notice.

West Virginia University is an Equal Opportunity-Affirmative Action institution. In compliance with Federal Executive Order No. 11246 as amended, Title VII of the Civil Rights Act, West Virginia Human Rights Act Title IX (Educational Amendments of 1972), Sections 503 and 504 of the Rehabilitation Act of 1973, and other applicable laws and regulations, the University provides equal opportunity to all prospective and current members of the student body, faculty, and staff on the basis of individual qualifications and merit without regard to race, sex, religion, age, national origin, or handicap, as identified and defined by law.

The University neither affiliates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, color, age, religion, sex, national origin, or handicap, as defined by applicable laws and regulations. —Office of the President

### **West Virginia Board of Regents**

**950 Kanawha Boulevard, East**

**Charleston, WV 25301**

Andrew L. Clark, Princeton  
Sue Seibert Farnsworth, Wheeling  
Clark B. Frame, Morgantown  
Paul J. Gilmer, Charleston  
Russell L. Isaacs, Charleston  
Betsy K. McCreight, Huntington  
John W. Saunders, Beckley  
Verl W. Snyder, Berkeley Springs  
William E. Watson, Wellsburg  
Bruce C. Flack, ex officio, Glenville  
Allison Henderson, ex officio, Institute  
Roy Truby, ex officio, Charleston  
Robert R. Ramsey, Jr., *Chancellor*, Charleston

### **West Virginia University Board of Advisors**

**Office of the President**

**Morgantown, WV 26506**

James H. Harless, *Chairman*, Gilbert  
Robert E. Maxwell, *Vice-Chairman*, Elkins  
J. Reginald Dietz, Weirton  
Joseph R. Goodwin, Ripley  
Hazel Ruby McQuain, Morgantown  
Victorine L. Monroe, Clarksburg  
William E. Collins, *Presidential Administrative Appointee*  
Kimberly K. Ferris, *Student Representative*  
Boyd D. Holtan, *Faculty Representative*  
Kathryn C. Beamer, *Classified Staff Representative*  
E. Gordon Gee, *President*

West Virginia University Bulletin (USPS 676-980) (ISSN 0362-3009)

Series 83, No. 8-1, February, 1983

Issued Monthly in January, February, April, and October;  
four times in March; and twelve times in June.

Second-class postage paid at Morgantown, WV 26505  
and at additional mailing offices.

POSTMASTER: Send Form 3579 to  
West Virginia University, Morgantown, WV 26506.

# Contents

University Calendar, 1983-84 .....	4
West Virginia University Medical Center .....	5
University Hospital .....	6
Radiologic Technology .....	6
Dental Clinic .....	6
University Health Service .....	7
Library .....	7
Admissions .....	7
Admission to WVU Medical Center Programs .....	7
Admission to West Virginia University .....	8
Admission of Transfer Students .....	9
Admission of Special Students .....	10
Admission of Post-Baccalaureate Students .....	10
Admission of Foreign Students .....	11
Admission of Veterans .....	12
Readmission .....	12
Fees and Expenses .....	13
Health Sciences Programs at WVU .....	13
Residential Status for Admission and Fee Purposes .....	17
Regulations Affecting Degrees .....	19
Medical Center Basic Sciences .....	35
Anatomy .....	35
Biochemistry .....	38
Conjoined Basic Sciences Courses .....	40
Microbiology .....	41
Pathology .....	44
Pharmacology and Toxicology .....	45
Physiology .....	47
School of Dentistry .....	50
Doctor of Dental Surgery Program .....	51
Endodontic Program .....	64
Orthodontic Program .....	66
Dental Hygiene Program .....	67
School of Medicine .....	71
Medical Technology .....	87
Division of Physical Therapy .....	94
School of Nursing .....	99
School of Pharmacy .....	109
Faculty and Staff .....	119



# University Calendar, 1983-84

## Summer Sessions, 1983

May 18, Wednesday	Registration, First Summer Session
May 18, Wednesday	First Classes
May 19, Thursday	Malcolm X's Birthday—Day of Special Concern
May 30, Monday	Memorial Day Recess
June 30, Thursday	Last Classes
June 30, Thursday	Registration, Second Summer Session
July 1, Friday	First Classes
July 4, Monday	Independence Day Recess
August 12, Friday	Last Classes

## First Semester, 1983-84

August 18, 19, Thursday and Friday	New Student Orientation
August 19, Friday	General Registration
August 22, Monday	First Classes
September 5, Monday	Labor Day Recess
September 8-9, Thursday and Friday	Rosh Hashanah— Days of Special Concern
September 17, Saturday	Yom Kippur—Day of Special Concern
October 7, Friday	Mid-Semester
October 7, Friday	Mid-Semester Reports Due
November 19, Saturday, to November 27, Sunday, incl.	Thanksgiving Recess
December 9, Friday	Last Classes
December 12, Monday, to December 17, Saturday, incl.	Final Examinations
December 18, Sunday, to January 5, Thursday, incl.	Christmas Recess

## Second Semester, 1983-84

January 6, Friday	General Registration
January 9, Monday	First Classes
January 15, Sunday	Martin Luther King's Birthday— Day of Special Concern
February 20, Monday	Washington's Birthday Recess
February 24, Friday	Mid-Semester
February 24, Friday	Mid-Semester Reports Due
March 3, Saturday, to March 11, Sunday, incl.	Spring Recess
April 10, Tuesday	Faculty Assembly
April 20, Friday	Good Friday—Day of Special Concern
April 23, Monday	Easter Recess
April 27, Friday	Last Classes
April 30, Monday, to May 5, Saturday, incl.	Final Examinations
May 7, Monday	Grade Reports for All Graduates Due in Dean's Office
May 8, Tuesday	Dean's Reports for All Graduates Due in Office of Admissions and Records
May 12, Saturday	Alumni Day
May 13, Sunday	Commencement

*The academic year is divided into two semesters of about seventeen weeks each and summer sessions.*

# West Virginia University Medical Center

Dramatic yet orderly growth in its education, service and research capacities marks West Virginia University Medical Center's first 25 years.

Compared with 1957 when only 113 men and women were enrolled in health sciences programs at the fledgling Medical Center, today's student total numbers 1,588 in dentistry, medicine, nursing, pharmacy, and related health fields.

Now, too, a Charleston Division of the Medical Center and a Wheeling Division of the School of Medicine help WVU add to its outreach programs from the Morgantown campus. Together they influence health education and care in every part of the state.

The Medical Center produces graduates qualified to meet most of the health needs of West Virginia's citizens. It also reinforces and updates its teaching with statewide continuing education programs, and serves as a hub for referrals from physicians and other health professionals. Through its faculty and its library staff, the Medical Center answers all inquiries about the latest health care methods, techniques, and scientific research.

In response to a recognized longtime need, the Legislature in 1951 authorized construction of the WVU Medical Center and levied a penny-a-bottle tax on soft drinks to provide basic financing. That same dedicated tax continues to bring in a portion of the Center's financial support. The Basic Sciences Building, completed in 1957, and University Hospital, which opened in 1960, join together as a single structure to make up the Medical Center. Previously, WVU could offer complete programs only in medical technology and pharmacy. A two-year School of Medicine required students to transfer to out-of-state schools to finish their studies, and no educational opportunities existed in dentistry or nursing at WVU.

Dentistry now enrolls 321 students including 101 in the department of dental hygiene, medicine 342, nursing 421, and pharmacy 190 in the three-year professional program. Medical technology enrolls 39 and physical therapy 53. There are 222 graduate students in the basic sciences, dentistry, medical technology, nursing, and pharmacy. There are also 189 doctors serving as postdoctoral residents.

Established in 1972 by an agreement between WVU and the Charleston Area Medical Center, the state's largest hospital complex, the Charleston Division of the WVU Medical Center expands the patient base and teaching scope of the University's education programs. It serves students in dentistry, medicine, nursing, pharmacy, and allied health fields and offers postgraduate specialty training. The \$6 million Education Building there was opened in 1977 as a resource for clinical learning.

The Wheeling Division was started in 1974 in cooperation with the Ohio Valley Medical Center and Wheeling Hospital. A joint Wheeling Area Medical Education Committee oversees the program, which offers elective opportunities for medical students and postgraduate specialty training.

Nonacademic policies and regulations affecting students are summarized in the *Student Handbook*. Every student is urged to obtain a copy of the *Student Handbook* from the Division of Student Affairs, 205 Moore Hall.

## **University Hospital**

West Virginia University Hospital is a 452-bed health center where education of students and advancement of knowledge go hand in hand with the best in medical care. It is the hub of the Medical Center complex, providing the training ground where students learn the science and art of caring for patients.

Services in some 50 specialties are provided for bed patients as well as through clinics where each week more than 2,000 patients are seen. Emergency Room service is provided around the clock, with more than 35,000 visits recorded annually.

Patients come to University Hospital and the clinics from all parts of West Virginia. They find expertise, experience, and equipment or other resources sometimes not available at other West Virginia hospitals, in areas such as pain control, bladder pacemakers, radiation therapy, pediatric surgery, and cleft palate repair.

Clinic management operations have been streamlined to meet a growing public demand for efficient, quality, personalized health care. All internal medicine subspecialty clinics have been merged into a new Group Medicine Clinic, providing a multidisciplinary team to handle almost any health problem. This outstanding clinic program has won the support of the Robert Wood Johnson Foundation with a \$783,000 four-year grant, one of 15 awarded among 51 competitors.

## **Radiologic Technology**

A two-year program for radiologic technologists is offered by the Department of Radiology at University Hospital. This course covers anatomy and physiology, radiologic physics, radiographic techniques, pathology, medical terminology, nursing procedures, and professional ethics. Subjects taken do not carry WVU credit, but provision to transfer course work under the Board of Regents bachelor of arts program may be pursued. Practical experience is gained on assigned tours of duty under the tutelage of staff members and clinical instructors.

Candidates must be graduates of accredited high schools with scholastic and personal records acceptable to the Admission Committee. Students provide their own lodging and meals.

Students completing the program are awarded a certificate and are eligible to take the American Registry Examination.

Communications should be addressed to: Coordinator, Radiologic Technology Training, Department of Radiology, West Virginia University Hospital, Morgantown, WV 26506.

## **Dental Clinic**

Clinical training and experience constitute a major part of the curriculum for dental students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment in the predoctoral program if their dental problems are of teaching value and if a student is available for assignment. The student is assigned to a patient and must work under close supervision of a faculty member. Dental services are also available through the various specialty programs and faculty practice. The clinic programs provide practical experience for the students and a much needed service to several thousand patients annually.



## University Health Service

The University Health Service provides primary medical care for WVU students, faculty, and staff. Each regularly enrolled student pays a fee which covers medical consultation and treatment at the Health Service on the ground floor of University Hospital, or in the hospital's Emergency Room when the Health Service is closed. It also covers limited payment for inpatient care at University Hospital. A voluntary insurance plan is available to students to cover the cost of inpatient and outpatient services beyond primary care. Students are strongly advised to obtain it. Details are available in a Health Service brochure.

## Library

The Medical Center Library, a part of the Medical Center Learning Resources Center, serves the students, faculty, and staff of the four Medical Center schools and University Hospital. Its services are available to health professionals throughout West Virginia and, within certain guidelines, to the general public.

The library in the Basic Sciences Building contains approximately 147,000 bound volumes. More than 2,100 domestic and foreign periodicals are currently received.

The Medical Center Library and the main University Library maintain an active interlibrary loan service. Material not in either library may be borrowed from libraries in other cities.

The library is open, except on holidays, from 8:00 a.m. to 11:45 p.m., Monday through Thursday; from 8:00 a.m. to 11:00 p.m., Friday; from 9:00 a.m. to 5:00 p.m., Saturday; and from 2:00 p.m. to 11:00 p.m., Sunday. Changes in scheduled hours are posted in advance.

## Admissions

### Admission to WVU Medical Center Programs

Applicants for admission to any of the schools of the WVU Medical Center should write to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, who will furnish official blanks upon which formal application must be made.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

For the 1982-83 academic year, the School of Dentistry admitted 50 students, of whom 38 were West Virginia residents; the School of Medicine 88 including 85 West Virginians; the School of Nursing 72 including 65 from West Virginia, and the School of Pharmacy 64 including 55 West Virginians.

When requesting an application by letter for any of the Medical Center programs, the permanent home address must be given.

A \$10.00 application fee is required and must accompany the applications.

Any applicant who is refused admission, or who fails to enroll after acceptance, must re-apply in the regular manner if consideration for a subsequent year is desired.

Those applicants accepted for admission to any of the programs of the WVU Medical Center, except the Division of Dental Hygiene and out-of-state applicants to the School of Dentistry, are required to deposit \$50.00 before acceptance becomes official. Applicants accepted to the Division of Dental Hygiene deposit \$40.00, and out-of-state applicants accepted to the School of Dentistry deposit \$100. If the applicant enrolls in the program of the applicant's choice, the deposit is applied to first-semester tuition.

If an application for admission to the School of Medicine is withdrawn after the applicant has been offered a place and has submitted a deposit, such deposit may be refunded any time before March 30 of the year in which enrollment is anticipated, but will not be refunded after this date. Deposits submitted to all other programs are nonrefundable.

It is required that during the first semester of the first year all WVU Medical Center students must complete certain prescribed immunization and diagnostic procedures.

## **Admission to West Virginia University**

Students will be considered for admission to West Virginia University on the basis of graduation and submission of transcripts from accredited high schools and ACT test results. High school graduates are required to present the following minimum credits:

English—4 units; required of all students.

Mathematics—2 units of college preparatory mathematics, one of which must be algebra; required of all students. Health sciences require 1 unit of geometry. *Additional Mathematics Requirements for Certain Programs:* Students who wish to enter any program requiring Mathematics 3 (College Algebra), or above, for graduation must present a minimum of 2 units of algebra and 1 unit of geometry.

Applicants with substantial life experience will be considered on an individual basis.

(Special admissions regulations for individual WVU Medical Center schools appear in subsequent pages of this *Catalog*.)

All students are required to take the American College Testing (ACT) Program tests and have the report of scores sent to WVU prior to the admission decision, and no other test may be substituted for it.

Students interested in financial assistance must file a Financial Aid Form (FAF) with College Scholarship Service, Box 2700, Princeton, NJ 08540. Forms are available at high schools or from the College Scholarship Service, or the WVU Student Financial Aid Office. Submit only forms dated for the current academic year.

(Your *Guide to Financial Aid—West Virginia University* is available at the WVU Student Financial Aid offices, in the Mountainlair, Downtown Campus, and in 104 Basic Sciences Building, Medical Center. The guide describes available financial aid, application procedures, and estimated educational expenses for attending WVU.)

West Virginia high school students should obtain applications for admission from their high schools. Out-of-state students may write the WVU Office of Admissions and Records and request an application form. Applicants should prepare their part of the application and then return it to their school. The school then will send the completed application and transcript of the student's high school grades directly to the WVU Office of Admissions and Records.

Students should apply for admission when they have met these requirements—

*West Virginia Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above) and has taken the ACT test, the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.0 of a possible 4.0 (C or above) and has taken the ACT test, the student should apply as soon as possible after beginning the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation and has taken the ACT test, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the high school evaluation report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the General Educational Development (GED) examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

*Out-of-State Residents:*

1. If, after 6 semesters of secondary school, the student has a grade-point average of 3.0 of a possible 4.0 (B or above) and has taken the ACT test, the student should apply as soon as possible after September 15.

2. If, after 7 semesters of secondary school, the student has a grade-point average of 2.5 of a possible 4.0 (C+ or above) and has taken the ACT test, the student should apply as soon as possible after the beginning of the 8th semester.

3. If the student has a grade-point average of 2.0 of a possible 4.0 (C average) at graduation and has taken the ACT test, the student should apply immediately after graduation from secondary school.

4. Return the application to the high school. The school will complete the high-school evaluation report and mail the application, the computer sheet, and a copy of the student's high school transcript to the WVU Office of Admissions and Records. If applying on the basis of the GED examination, an official copy of the student's test scores and diploma must be sent to the WVU Office of Admissions and Records.

## **Admission of Transfer Students**

Applicants for transfer from another college or university should submit the following to the Office of Admissions and Records:

1. A complete application for undergraduate admission.

2. An official transcript of all college work attempted to date. An official transcript covering subjects subsequently taken should be sent as soon as possible.

3. Catalog pages describing all subjects which have or will have been completed. The applicant's name should be written on each page and each subject indicated by a check mark in the margin. Complete catalogs should not be sent. (*Not necessary from West Virginia colleges.*)

4. Students transferring to WVU with less than 28 hours are required to have the scores of the ACT test submitted to WVU.

The cumulative average of all work attempted before transfer must be at least C.



Credits and grades earned for all baccalaureate-level courses at any baccalaureate degree-granting institution in the West Virginia state system of higher education and up to 72 hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia state system shall be transferable toward a bachelor's degree. (See also "Requirements As to Residence," page 21.)

Credits (though not grades) are transferable from institutions outside the West Virginia state system for courses carrying a grade of C or higher. A grade of D on the first of sequence courses may be transferred if the second course grade is C or higher.

Credits from two-year community colleges and junior colleges outside the West Virginia state system are limited to 72 hours of lower-division courses. These colleges must be accredited by the North Central Association of Colleges and Schools or another regional accrediting association.

The transfer of credits does not exempt the student from satisfying all the requirements for the student's degree program at WVU.

All transcripts must be in the Office of Admissions and Records three weeks in advance of registration.

Evaluation of transcripts for transfer of credit is furnished only after receipt of complete official transcripts and application for admission.

Transfer students generally are admitted only after they complete one full year at another institution. Applicants who have less than one full year of college work elsewhere must submit both their college and high school records. Students who have successfully completed 6 hours or less at another accredited institution will apply as freshmen.

### **Intrauniversity Transfers**

Students transferring from Potomac State College of WVU shall be considered intrauniversity transfers. All records made at Potomac State College are part of the student's WVU record, but no more than 72 hours may be applied toward the baccalaureate degree.

If a change of major is involved, the transferee should consult the college, school, or department to which the student is transferring concerning requirements for the new major.

## **Admission of Special Students**

Persons not desiring to become candidates for a degree may, by special permission, be admitted as special students. Such students are subject in all respects to the usual rules relating to registration and scholarship. Admission to any class is subject to the approval of the instructor in charge.

Students who do not plan to follow a degree program at WVU should submit only a statement of good standing from the last college attended.

## **Admission of Post-Baccalaureate Students**

Students having one or more earned degrees from an approved college or university and desiring to enroll for undergraduate credit may be admitted as post-baccalaureate students. Students admitted in this category would not be working toward a graduate degree and credit earned while under this classification would be limited to undergraduate credit. Students admitted as post-baccalaureate, since they are limited to undergraduate credit, would be assessed undergraduate fees. Candidates for admission to this classification who are not graduates of WVU must submit an official transcript from the institution granting their latest degree.

## Admission of Foreign Students

This school is authorized under Federal law to enroll nonimmigrant alien students.

Foreign students wishing to enroll at WVU must comply with all academic requirements stated above in addition to other academic and nonacademic requirements, as follows.

*Early Inquiry and Application*—Foreign applicants should forward a letter of inquiry one year before they intend to begin study in the United States. Foreign students who have been granted admission are expected on campus at the beginning of July for a six-week period of orientation and an intensive study of English. The University receives a large number of applications from international students. For this reason, and because of the time required for the student to make visa and financial arrangements, April 1 has been established as a deadline after which applications cannot be processed.

Foreign students should make all arrangements for their financial obligations to WVU and for their entire stay in the United States before leaving their country.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

*English Proficiency*—All foreign applicants whose native language is not English must submit Test of English As a Foreign Language (TOEFL) scores. A minimum of 550 is required for admission. TOEFL information and registration forms are available from the Educational Testing Service, Princeton, NJ 08540 USA. Tests are normally given six times each year. It requires one month to score and report individual test results. Registration for the TOEFL examination closes five weeks before the testing date.

*Credentials*—Complete and original official records of all studies undertaken by an applicant at any institution attended (secondary school, college, university, technical school, professional school, etc.), must be provided at time of application for admission to WVU. Copies of original records are acceptable, provided they are officially stamped.

Such records should include: (1) complete dates of attendance; (2) identification of individual subjects; (3) total number of hours in each class per week; (4) total number of weeks each class meets in session; (5) final grade in each subject, for each year; (6) actual credits earned for each subject; (7) class, division, or rank achieved; (8) identification of the individual; (9) explanation of each institution's grading system; and (10) certification, and date, of degree or awards achieved. If any of this information cannot be supplied, an official explanatory statement from the school should be submitted. *(All documents must be accompanied by certified English translations.)*

All documents should be forwarded directly from the registrar or other authorized official of the school to the WVU Office of Admissions and Records.

If an applicant is currently enrolled in a school, tentative admission may be granted on the basis of an incomplete record which indicates the applicant will unquestionably meet the admission standards of WVU. Final admission, however, cannot be approved until the complete record has been received and evaluated.

*Foreign Students Transferring Within the United States*—Foreign students applying to transfer from schools within the United States will not be admitted and permitted to register at WVU unless they have complied with all transfer procedures as required by the United States Immigration and Naturalization Service (INS).

The school the student was last authorized to attend must have completed and signed the INS form I-538. This, together with a valid I-20 form received from WVU and the I-94 form, must have been submitted to the INS office having jurisdiction over the school the student was last authorized to attend. If the student is not now attending that school, a letter must be added explaining in detail why.

If the INS approves the transfer, this approval will be stamped on the student's I-94. The student must then immediately notify WVU that the transfer has been approved.

Only when these procedures have been completed will WVU undertake to admit and register the student. No student should move to Morgantown without having received this assurance of admission to WVU.

## **Admission of Veterans**

Veterans may be admitted to WVU with less than the minimum admission requirements necessary for other, nonveteran applicants.

Information regarding educational opportunities made possible at the University through provisions of the Veterans Readjustment Benefits Act of 1966—G.I. Bill (Public Law 358), the Vocational Rehabilitation Program of the Veterans Administration (Public Law 16), and the War Orphan's Educational Assistance Act of 1956 (Public Law 634) may be obtained from a financial aid counselor by personal conference at the Financial Aid Office in Mountainlair, or by mail. An amendment to Public Law 634, enacted in 1964, provides benefits to many dependents of 100 percent disabled veterans.

Veterans having at least one continuous year of active military service may receive advanced placement credit for General Physical Education<sup>1</sup> and 2. Proof of such military service must be presented to the Dean of Admissions and Records.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

## **Readmission**

Undergraduate students who leave the University for at least one complete semester are required to submit an application for readmission to the Dean of Admissions and Records.

Students who have been suspended from the University must have written approval from the dean of the school or college to which they desire to be admitted.

Approval in writing must be secured in advance to elect courses offered elsewhere. A cumulative average of C is required in order to obtain such approval. Credit will be accepted for transfer for courses carrying a grade of C or higher when the conditions indicated above have been met.



# Health Sciences Programs At West Virginia University

---



---

Degree Program	Bachelor	Master	Doctorate/ Professional
----------------	----------	--------	----------------------------

## School of Dentistry

Dental Hygiene .....	B.S.		
Dentistry .....			D.D.S.
Endodontics .....		M.S.	
Orthodontics .....		M.S.	

## School of Medicine

Anatomy .....	M.S.		Ph.D.
Biochemistry (Medical) .....	M.S.		Ph.D.
Medical Technology .....	B.S.	M.S.	
Medicine .....			M.D.
Microbiology (Medical) .....		M.S.	Ph.D.
Pharmacology and Toxicology .....		M.S.	Ph.D.
Physical Therapy .....	B.S.		
Physiology (Medical) .....		M.S.	Ph.D.
Biomedical Sciences .....			Ph.D.*

## School of Nursing

Nursing .....	B.S.N.		M.S.N.
---------------	--------	--	--------

## School of Pharmacy

Pharmaceutical Sciences .....		M.S.	Ph.D.
Pharmacy .....	B.S.Pharm.		

## University Hospital

Medical Graduate Residencies			
Radiologic Technology .....			Certificate

\*Awarded under the auspices of the degree-granting authority of West Virginia University, but in cooperation with the Basic Sciences Departments of the Marshall University School of Medicine.

---

Students wishing to change their major upon readmission must have permission from their previous dean and the dean of the college to which they desire to be admitted.

## Fees and Expenses

All West Virginia University fees are subject to change without notice.

All fees are due and payable to the Controller on the days of registration. Medical Center students pay their fees at the Controller's Office, Basic Sciences Building. Students must pay fees before registration is accepted. Completion of arrangements with the Controller's Office for payment from officially accepted scholarships, loan funds, grants, or contracts shall be considered sufficient for acceptance of registration. Fees paid after regular registration must be paid to the University Cashier in Mountainlair. Medical Center students pay at the Controller's Office, Basic Sciences Building.

All students are expected to register on days set apart for registration at the beginning of each semester or summer session of the University.

No student will be permitted to register at the University after the twelfth day of a semester or the fourth calendar day of the summer sessions or a single summer session. Days are counted from the first day of registration.

Any student failing to complete registration on regular registration days is subject to the Late Registration Fee of \$15.00.

Students registering pay the fees shown in the fees charts, plus special fees and deposits as required.

No degree will be conferred upon any candidate and no transcripts will be issued to any student before payment is made of all tuition, fees, and other indebtedness to any unit of the University.

Persons not registered as University students and who are not members of its administrative or teaching staffs shall not be admitted to regular attendance in University classes.

## Classification of Students (Full-Time and Part-Time)

A *full-time graduate student* is one who is registered for 9 or more semester hours of the regular academic year, or 6 or more semester hours of work altogether during the summer.

A *full-time undergraduate student* is one who is registered for 12 or more semester hours of work each semester of the regular academic year, or 6 or more semester hours of work during a 6-week summer session.

For fee assessment purposes, a *part-time graduate student* is one who is registered for fewer than 9 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

A *part-time undergraduate student* is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 6 semester hours during a 6-week summer session.

It should be recognized that unique curriculum requirements in several of the Medical Center programs may require student involvement in summer clinical clerkships prior to official enrollment for the following semester's work.

### Summer Fees

Tuition, per semester hour	Resident	Nonresident
Undergraduate students .....	\$20.00	\$ 84.00
Graduate students .....	30.00	123.00
Dentistry and Medicine students .....	62.00	173.00
Daily Athenaeum Fee* .....	1.00	1.00
Radio Station Fee* .....	1.00	1.00
Health, Counseling, and Program Services Fee .....	19.00	19.00
Mountainlair Construction Fee per 6-week summer session or any portion thereof* .....	15.00	15.00
Student Affairs Fee .....	8.00	8.00
Transportation Fee .....	13.00	13.00

\*Fee required of all students. (Nonrefundable unless student withdraws officially before the close of general registration.)

# ESTIMATED EXPENSES FOR MEDICAL CENTER PROGRAMS (First Semester) [Subject to Change]

Tuition and registration are the same for both semesters. Some expenses, such as instruments and books, will be different for the Second Semester.

School or Division	Tuition and Registration Fees		Instruments	Lab Coats, Uniforms, etc.	Books	Total	
	Resident	Nonresident				Resident	Nonresident
<b>Dental Hygiene</b>							
Freshman	\$420 00	\$1,180 00	\$130 00	\$17 00	\$140 00	\$707 00	\$1,467 00
Sophomore	420 00	1,180 00	700 00	165 00	155 00	1,440 00	2,200 00
Junior	420 00	1,180 00	100 00	66 00	140 00	726 00	1,486 00
Senior	420 00	1,180 00	50 00	66 00	50 00	586 00	1,346 00
<b>Dentistry</b>							
First Year	730 00	1,730 00	2,200 00	88 00	300 00	3,318 00	4,318 00
Second Year	730 00	1,730 00	600 00	110 00	140 00	1,580 00	2,580 00
Third Year	730 00	1,730 00			75 00	805 00	1,805 00
Fourth Year	730 00	1,730 00				730 00	1,730 00
<b>Medical Technology</b>							
Junior	420 00	1,180 00		85 00	100 00	605 00	1,365 00
Summer	140 00	368 00		160 00	35 00	355 00	563 00
Senior	420 00	1,180 00		137 00	145 00	702 00	1,462 00
<b>Medicine</b>							
First Year	730 00	1,730 00	259 00	103 00	864 00	1,956 00	2,956 00
Second Year	730 00	1,730 00	778 00	103 00	691 00	2,302 00	3,302 00
Third Year	730 00	1,730 00		68 00	691 00	1,489 00	2,489 00
Fourth Year	730 00	1,730 00		68 00	432 00	1,230 00	2,230 00
<b>Nursing</b>							
Sophomore	420 00	1,180 00		126 00	170 00	716 00	1,476 00
Summer	132 00	474 00			55 00	187 00	529 00
Junior	420 00	1,180 00			100 00	520 00	1,280 00
Senior	420 00	1,180 00			100 00	520 00	1,280 00
<b>Pharmacy</b>							
Third Year	420 00	1,180 00	46 00	30 00	200 00	696 00	1,456 00
Fourth Year	420 00	1,180 00		30 00	75 00	525 00	1,285 00
Summer	420 00	1,180 00				420 00	1,180 00
Fifth Year	420 00	1,180 00		30 00	100 00	550 00	1,310 00
<b>Physical Therapy</b>							
Junior	420 00	1,180 00		70 00	431 00	921 00	1,681 00
Senior	420 00	1,180 00		70 00	316 00	806 00	1,566 00
Summer	42 00	177 00				42 00	177 00

## TUITION & REGISTRATION FEES BREAKDOWN

	Tuition	Registration	Higher Education Resources	Institutional Activity	Mountainair Construction	Total
Dent Hyg. Med Tech.	\$80 00	\$50 00	\$110 00	\$140 00	\$40 00	\$420 00
Full-time 9 hr or more	400 00	250 00	350 00	140 00	40 00	1,180 00
Resident						
Nonresident						
Graduate	110 00	50 00	110 00	140 00	40 00	450 00
Full-time 9 hr or more	500 00	250 00	350 00	140 00	40 00	1,280 00
Resident						
Nonresident						
Dentistry & Medicine	300 00	50 00	200 00	140 00	40 00	730 00
Full-time 9 hr or more	800 00	250 00	500 00	140 00	40 00	1,730 00
Resident						
Nonresident						

## TUITION PER SEMESTER HOUR—PART-TIME & SUMMER (Under 9 hr.)

Dental Hygiene, Medical Technology, Nursing, Pharmacy and Physical Therapy	Resident	Nonresident
Graduate	\$20 00 Per Credit Hour	\$84 00 Per Credit Hour
Dentistry and Medicine	30 00 Per Credit Hour	123 00 Per Credit Hour
	62 00 Per Credit Hour	173 00 Per Credit Hour
		plus Special Fees

SEMESTER \$45 00 ◀ SPECIAL FEES ▶ SUMMER \$17 00 under 6 hr — \$57 00 6 hr and up each session



## Special Fees

Application for Undergraduate Admission (Freshman, Transfer, and Foreign Students) .....	\$10.00
Application for Admission (College of Law and Graduate Studies) ..	20.00
Certificate of Advanced Study in Education .....	2.00
Diploma Replacement .....	5.00
Examination for Advanced Standing .....	35.00
Examination for Entrance Credit, per unit .....	1.00
Examination of Candidate for Graduate Degree .....	1.00
(For graduate students not otherwise enrolled at time of final examination.)	
General Educational Development Tests (high school level) .....	15.00
(If the applicant applies for admission to and registers in WVU within twelve months of the date of qualifying for the test, a \$10.00 credit shall be established for the applicant.)	
Graduate Program Continuance Fee .....	35.00
Graduation .....	20.00
(Payable by all students at the beginning of the semester or session in which they expect to receive their degrees.)	
Late Registration (nonrefundable) .....	15.00
(Not charged to students who complete registration during the regular registration days as set forth in the University Calendar.)	
Reinstatement of Student Dropped from the Rolls .....	3.00
Student Identification Card Replacement .....	1.00
Student's Record Fee .....	2.00
(One transcript of a student's record is furnished by the Dean of Admissions and Records without charge. This fee is charged for furnishing an additional transcript.)	

## Fees for Off-Campus Courses

Fees for credit hours for off-campus students are the same as those charged students enrolled in on-campus courses. Off-campus students do not pay the Daily Athenaeum Fee, the Radio Station Fee, or the Mountainlair Construction Fee. However, all students must pay a \$20.00 course fee for each off-campus course taken.

## Laboratory Fees

Consult specific departmental sections of this *Catalog* concerning nonrefundable deposits and microscope rental fee.

## Service Charge on Returned Checks

A service charge of 5 percent of the amount of each check returned unpaid by the bank upon which it is drawn shall be collected unless the student can obtain an admission of error from the bank.

If the check returned by the bank was in payment of University and registration fees, the Controller's Office shall declare the fees unpaid and registration cancelled if the check has not been redeemed within three days from date of written notice. In such a case the student may be reinstated upon redemption of the check, payment of the 5 percent service charge, the Reinstatement Fee of \$3.00, and the Late Payment Fee of \$15.00.

Refund of Fees

A student who officially withdraws from University courses may arrange for a refund of fees by submitting to the University Controller evidence of eligibility for a refund.

To withdraw officially, a student must apply to the Division of Student Affairs for permission. Semester fees will be returned in accordance with the following schedule:

Academic Year (Semester)	Refund
During the first and second weeks .....	90%
During the third and fourth weeks .....	70%
During the fifth and sixth weeks .....	50%
Beginning with the seventh week .....	No Refund

Summer Sessions and Non-Traditional Periods

Refunds for summer sessions and non-traditional periods are established based upon the refund rate for the academic year. (For specific information concerning Summer Session refunds, see the appropriate Summer Schedule of Courses.) Should the percentage calculation identify a partial day, the entire day will be included in the higher refund period.

No part of the Activity Fee is refundable unless the student withdraws from the University.

University policy provides that students called to the armed services of the United States may be granted full refund of refundable fees, but no credit, if the call comes before the end of the first three-fourths of the semester, and that the full credit of courses be granted to persons called to the armed services of the United States if the call comes thereafter; provided, however, that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of departure for military service. In the recording of final grades, for three-fourths of a semester or more, both passing and failing grades are to be shown on the student's permanent record.

Identification Card

An identification card is issued to each full-time student upon paying full fees. It entitles the owner admission to certain University athletic events, various activities of student administration, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

Residential Status for Admission and Fee Purposes

The West Virginia Board of Regents has adopted a policy regarding classification of students as residents or nonresidents for admission and fee purposes at all institutions under its jurisdiction.

1. General. Students enrolling in a West Virginia public institution of higher education shall be classified as resident or nonresident for admission, tuition, and fee purposes by the institutional officer designated by the President. (At West Virginia University, the Dean of Admissions and Records.) The decision shall be based upon information furnished by the student and all other relevant information. The Dean of Admissions and Records is authorized to require such written documents, affidavits, verifications, or other evidence as are deemed necessary to establish the

domicile of a student. The burden of establishing residency for admission, tuition, and fee purposes is upon the student.

If there is a question as to residence, the matter must be brought to the attention of the Dean of Admissions and Records at least two weeks prior to the deadline for the payment of tuition and fees. Any student found to have made a false or misleading statement concerning residence shall be subject to institutional disciplinary action and will be charged the nonresident fees for each academic term theretofore attended.

2. *Residence Determined by Domicile.* Domicile within the State means adoption of the State as the fixed permanent home and involves personal residence within the State with no intent on the part of the applicant or, in the case of the dependent student, the applicant's parent(s) to return to another state or country. Residing with relatives (other than parent(s)/legal guardian) does not, in and of itself, cause the student to attain residence in this State for admission or fee payment purposes. West Virginia domicile may be established upon the completion of at least twelve months of continued residence within the State prior to the date of registration, provided that such twelve months residency is not primarily for the purpose of attendance at any institution of higher education in West Virginia.

Establishment of West Virginia domicile with less than twelve months residence prior to the date of registration must be supported by evidence of positive and unequivocal action. Priority consideration should normally be given to such evidence as the purchase of a West Virginia home, full-time employment within the State, paying West Virginia property tax, filing West Virginia income tax returns, registering of motor vehicles in West Virginia, and marriage to a West Virginia resident. Items of lesser importance which might be considered as support factors include registering to vote in West Virginia and the actual exercise of such right, possessing a valid West Virginia driver's license, transferring or establishing local church membership, involvement in local community activities, and various other acts which may give evidence of intent to remain indefinitely within the State. Proof of a number of these actions shall be considered only as evidence which may be used in determining whether or not a domicile has been established. Factors militating against the establishment of West Virginia residency might include such considerations as the student not being self-supporting, being claimed as a dependent on federal or state income tax returns or the parents' health insurance policy if the parents reside out of state, receiving financial assistance from state student aid programs in other states, and leaving the State when school is not in session.

3. *Dependency Status.* A dependent student is one who is listed as a dependent on the federal or state income tax return of his/her parent(s) or legal guardian or who receives major financial support from that person. Such a student maintains the same residency as that of the parent(s) or legal guardian. In the event the parents are divorced or legally separated, the dependent student takes the residence of the parent with whom he/she lives or to whom he/she has been assigned by court order. However, a dependent student who enrolls and is properly classified as a resident student maintains that classification as long as the enrollment is continuous and that student does not attain independence and establish domicile in another state.

A nonresident student who becomes independent while a student at an institution of higher education in West Virginia does not, by reason of such independence alone, attain residence in this State for admission or fee payment purposes.



4. *Change of Residence.* A student who has been classified as an out-of-state resident and who seeks resident status in West Virginia must assume the burden of providing conclusive evidence that he/she has established domicile in West Virginia with the intention of making the permanent home in this State. The intent to remain indefinitely in West Virginia is evidenced not only by a person's statements but also by that person's actions. In making a determination regarding a request for change in residency status, the Dean of Admissions and Records shall consider those actions referenced in Section 2 above.

5. *Military.* An individual who is on full-time active military service in another state or a foreign country or an employee of the federal government shall be classified as a resident for the purpose of payment of tuition and fees, provided that the person established a domicile in West Virginia prior to entrance into federal service, entered the federal service from West Virginia, and has at no time while in federal service claimed or established a domicile in another state. Sworn statements attesting to these conditions may be required. The spouse and dependent children of such individuals shall also be classified as residents of the State of West Virginia for tuition and fee purposes.

Persons assigned to full-time active military service in West Virginia and residing in the State shall be classified as in-state residents for tuition and fee purposes. The spouse and dependent children of such individuals shall also be classified as residents of the State of West Virginia for tuition and fee purposes.

6. *Aliens.* An alien who is in the United States on a resident visa or who has filed a petition for naturalization in the naturalization court, and who has established a bona fide domicile in West Virginia as defined in Section 2 may be eligible for resident classification, provided that person is in the State for purposes other than to attempt to qualify for residency status as a student.

7. *Appeal Process.* The decisions of the Dean of Admissions and Records may be appealed to the President of West Virginia University. The President may establish such committees and procedures as are determined to be appropriate for the processing of appeals. The decision of the President of West Virginia University may be appealed in writing with supporting documentation to the West Virginia Board of Regents in accord with such procedures as may be prescribed from time to time by the Board.

## Regulations Affecting Degrees

Candidates for degrees are eligible for graduation when they complete the requirements in the college or school in which they are registered which were in effect at the time of their first registration in that college or school, provided they graduate within a period of seven years from the time of their first registration. Students who do not complete the requirements for graduation within seven years from their first registration must meet *all the conditions* of a later *Catalog* — one that will be no more than seven years old by the time they graduate.

If there are major changes in the *Undergraduate Catalog* during the student's course of study, the student does not have to abide by them unless they are promulgated by the Board of Regents, or by local, state, or federal law. However, by choice and with the approval of the adviser and the Dean, a student may meet *all the conditions* of a later *Undergraduate Catalog* than that under which the student first registered in that college or school.

University policy provides that in view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of WVU the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

All degrees are conferred by the Board of Regents upon recommendation of the faculties of the various colleges and schools. Degrees are granted at the close of the semester or summer session in which the students complete their work.

All candidates for degrees at WVU must report to their academic advisers and fill out an "Application for Graduation and Diploma." Application must be made during the first month of the semester or session in which the candidate expects to be graduated

## **Baccalaureate Degrees**

### **Credits Required**

In addition to the University requirements listed in this *Catalog*, each baccalaureate degree is conditional upon the completion of a specified number of semester hours of credit, as determined by the student's degree program requirements. Therefore, students must familiarize themselves with their school and degree program requirements, as given in Part 3 of this *Catalog*.

### **English Composition and Rhetoric**

Two semesters of English Composition and Rhetoric (English 1 and 2) are required of all candidates for the bachelor's degree in all colleges and schools of the University, unless part or all of the requirement for certain students of superior achievement is waived under regulations prevailing at the time of admission. Such students will be informed of their eligibility by the Coordinator of Writing Programs in English.

### **University Core Curriculum**

To qualify for graduation, all WVU students must satisfy the requirements of the University Core Curriculum. The separate colleges and schools determine the time at which students take Core courses during their total program of study at the University.

The purpose of the Core Curriculum is to encourage the acquisition of a liberal education. A liberal education presupposes the capacity for synthesizing knowledge of the humanities, social sciences, natural sciences, and mathematics. Such a synthesis of both past and contemporary knowledge can make possible the intellectual flexibility needed to develop values, attitudes, tastes, and traits associated with the educated person in the modern world. Three areas within the Core Curriculum are recognized:

**Core A** (The study of the accumulated knowledge and experience contained in world literature, fine arts, religion, and philosophy)—

Selected courses in Art, English (exclusive of Engl. 1 and 2), Humanities, Languages, Music, Philosophy, Religious Studies, Multidisciplinary Studies, Speech Communication, and Theatre.

**Core B** (The study of man's interaction with man and with society in the social, historical, political, economic, and similar contexts)—

Selected courses in Economics, Education Foundations, Forestry, Geography, History, Mineral Resources, Political Science, Psychology, Multidisciplinary Studies, Social Science, Sociology and Anthropology, and Technology Education.

**Core C** (The study of mathematical and natural sciences designed to foster individual acquisition of knowledge and skills necessary for scientific inquiry)—

Selected courses in Agricultural Microbiology, Biology, Chemistry, Computer Science, Entomology, Genetics, Geology, Mathematics, Nutrition, Physical Science, Physics and Astronomy, Physiology, Multidisciplinary Studies, and Statistics.

Twelve credit hours including at least two subjects must be taken in each area. (Two 4-credit courses and one 3-credit course may be substituted in lieu of 12 credit hours.)

The determination as to whether ROTC courses will be counted toward fulfillment of the Core Curriculum or will be counted as free electives is the prerogative of the department chairperson or dean of the appropriate college or school.

[A listing of courses qualifying for Core Curriculum credit is given in each college or school section of the *Undergraduate Catalog*. Colleges and schools offering Core courses include: College of Agriculture and Forestry, page 49; College of Arts and Sciences, pages 96-97; College of Business and Economics, page 221; College of Creative Arts, pages 229-230; College of Human Resources and Education, page 308; College of Mineral and Energy Resources, page 376; and in Multidisciplinary Studies, pages 383-384.]

## **Branch, Community, and Junior Colleges**

Seventy-two hours of credits and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges may not exceed 72 hours. Transfer credit from community colleges and junior colleges is normally limited to lower-division courses.

## **Requirements As to Residence**

A student who comes to WVU from another college or university should transfer not later than the beginning of the third year. In no case will a student who matriculates in WVU later than October 1 in any year be permitted to receive a degree at the next commencement.

In special cases, students who desire to leave WVU at the close of their third year to enter another institution for the purpose of taking a combined course leading to two degrees or of preparing for graduate study, upon application beforehand to the Committee on Academic Standards of the college or school in which they are registered, may be permitted to do the work of the fourth year, or a part thereof, at such other institution and to receive the bachelor's degree from WVU upon presentation of the proper credits.



The transfer student whose undergraduate work has been altogether in institutions within the West Virginia state system of higher education must complete either the last 30 hours of work, or a minimum of 36 hours including 16 of the last 32 hours in residence. Other transfer students must complete either a total of at least 90 hours or the last 30 hours in residence at WVU. The transfer student may be required to earn up to 15 hours in the major field in residence regardless of the number of hours and the nature of the courses transferred.

## **Work Done Out of Residence**

It is WVU policy to discourage the taking of regular residence courses in absentia. In the case of courses begun at WVU and not completed because of illness or for other acceptable reasons, however, permission to complete the work in absentia under the direction of regular WVU instructors may be granted by the Committee on Academic Standards of the college or school concerned; but in such case credit should be given only upon a report of a grade of no less than C on final examination. This regulation does not apply to WVU off-campus courses.

If the final grade of a student in any course is F, the student must take the course again in residence at WVU if the student desires to receive credit for it, unless the dean of the college or school authorizes the exception.

A student currently enrolled in WVU who wishes to obtain credit toward a WVU degree for courses offered at other institutions should obtain advance approval in writing from the adviser, dean, and the Dean of Admissions and Records. Some courses at some institutions are not directly transferable to WVU credit and, thus, the student runs the risk of losing such credit unless prior approval has been obtained. A student wishing to transfer credit from another institution should also be aware of the "Requirements As to Residence" and the specific degree requirements described elsewhere in this *Catalog*. Transfer credit from institutions outside the West Virginia state system will be accepted only for courses carrying a grade of C or higher when conditions indicated above have been met.

A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU upon readmission to the University. After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during the regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met.

## **Substitution for Required Courses**

A student who desires to substitute another course for any prescribed in the student's curriculum or required for the degree toward which the student is working must obtain permission for such substitution from the Committee on Academic Standards in the student's college or school.

## **Advanced Placement Credit**

West Virginia University encourages students to work to their full capacity and to advance as rapidly as appropriate in their academic work. A number of opportunities are open to both qualified high school juniors and

seniors, as well as to adults returning to school after an interval of work or military experience, to demonstrate competence beyond that normally associated with graduation from high school.

High school students who take college-level subjects offered in their schools in cooperation with the College Entrance Examination Board (CEEB) Advanced Placement Program should take the appropriate three-hour examinations administered by the Advanced Placement Service and have the scores sent to WVU. Credit for corresponding WVU courses will be given for high achievement on these tests.

Applicants for admission to the University, especially those who have gained a significant level of maturity through their life experiences, may gain college credit for their educationally related experiences through the College Level Examination Program (CLEP) of the CEEB. Policy of the West Virginia Board of Regents allows University credit to be awarded for successful completion of any or all of the CLEP Subject Examinations, as well as allowing up to 34 hours of general education credit for successful performance on the CLEP General Examinations. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek advanced standing via the CLEP program. Interested applicants may write the Dean of Admissions and Records for further information regarding the CLEP program and WVU credit.

Advanced placement also may be granted for specific military experience. Returning veterans should consult the Dean of Admissions and Records for details.

After admission to WVU, students may elect to take examinations demonstrating their competence in particular course work. Credit or advanced placement is given for satisfactory completion of the tests. Students interested in challenging courses by examination should consult their advisers for procedures and details.

### **Credit by Examination**

Students actively enrolled in WVU may receive credit for courses demonstrating competency in the content covered by a particular course. The department responsible for administering the course will determine the evaluation tools. Where skill and cognitive abilities are components of the course, both will be evaluated. Credit will be given if a satisfactory degree of competency is demonstrated.

A college, school, or department may require students desiring such credit to prepare a self-evaluation statement determining the degree of competency they possess and the methods by which it was achieved.

Students interested in receiving credit for a course by examination should consult the college or school in which the course is offered for procedures and details.

### **Credit for Correspondence Work**

Credit up to a maximum of 30 semester hours for work completed by correspondence in nonlaboratory courses will be accepted by WVU when such work is given by accredited colleges or universities that accept work for credit toward their own degrees and whose residence work is accepted by WVU.

## **Second Bachelor's Degree**

A student who has received one baccalaureate degree and wishes to receive a second baccalaureate degree must satisfactorily complete enough additional credits earned at WVU and elsewhere, is at least 30 semester hours more than the number required for the first baccalaureate degree; all requirements, departmental and otherwise, of the second baccalaureate degree program must be satisfied. In no case will a second baccalaureate degree be awarded to a student who has not met the University residence requirement (see "Requirements As to Residence").

A student who wishes to receive simultaneously two baccalaureate degrees must satisfactorily complete a minimum of 158 credits and meet all requirements, departmental and otherwise, of both degree programs. Students desiring to receive simultaneous baccalaureate degrees must be admitted to both programs and provide the Office of Admissions and Records of the college or school approvals in writing.

(Effective Date: Students graduating after August 31, 1979.)

## **Visitors**

Full-time University students may attend classes as visitors, provided they obtain the written permission of their advisers and of the instructors in classes they desire to visit. Members of the administrative or teaching staffs, or other regular employees of the University, may attend classes as visitors provided they obtain written permission of the chairpersons of their departments and of the instructors in the classes which they desire to visit.

No credit is given for work in such classes. Such persons may not obtain credit by advanced standing examinations in courses attended as visitors.

## **Auditors**

Students may enroll in courses without working for grade or for credit by registering as auditors and by paying full fees. Change in status from audit to credit or from credit to audit may be made during the registration period. Attendance requirements for auditors shall be determined by the instructor of the course being audited. It is the prerogative of the instructor to strike the name of any auditor from grade report forms and to instruct the Office of Admissions and Records to withdraw the auditor from the class, if attendance requirements are not met.

## **Summer Sessions**

There are two summer sessions, each of six weeks duration. The first session begins approximately the middle of May and ends June 30. The second session begins July 1, and ends the second week of August. Requirements for admission and character of the work offered are the same for the summer sessions as for the regular academic year.

Credit may be obtained toward the bachelor's, master's, and doctorate. Offerings are varied from summer to summer so that students may complete work for the master's degree by attending summer sessions only.

For complete information, see the *WVU Summer Sessions Bulletin*.

## **Grade-Point Average**

All academic units of the University require minimum standards of scholastic quality. Grade points are computed only on grades earned at WVU and at other institutions in the West Virginia state system of higher education.



To be eligible for graduation, a student must have a grade-point average of 2.0 (C) or higher on all work for which the student receives grades (except W, WU, and P). In addition, specific degree programs may require minimum grades of C, or in some cases higher than C, in specific courses or portions of the baccalaureate program.

It is the student's responsibility to keep informed of the student's grade-point standing. This information may be obtained at any time from the dean of the college or school in which the student is registered.

Seventy-two hours of credit and grades earned for college-parallel courses completed at community colleges or branch colleges in the West Virginia system of higher education may be applied toward a baccalaureate degree at WVU. Transfer credit for college-parallel courses completed at other community colleges and junior colleges is normally limited to lower-division courses.

## Graduation with Honors

The University recognizes distinguished academic achievement by awarding initial baccalaureate degrees *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude*, to qualified students. The following regulations govern these awards:

1. Grade-point averages for graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be computed by starting with the student's penultimate semester or summer session and continuing in reverse chronological order until at least 80 semester hours, excluding credits earned with a grade of P, have been counted. If, in order to total the required number of hours it is necessary to include any part of a semester or summer session, the work of the whole semester or session shall be included.

2. Students who transfer to WVU may be eligible for graduation with honors based on the computational system stated above.

3. Subject to the above conditions, all candidates for a baccalaureate degree whose grade-point average is 3.80, or higher, shall be graduated *Summa Cum Laude*. Those whose average is lower than 3.80, but equal to or higher than 3.60, shall be graduated *Magna Cum Laude*. Those whose average is lower than 3.60, but equal to or higher than 3.40, shall be graduated *Cum Laude*.

4. Fitting recognition of graduation *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* shall be made on the candidate's diploma and in the Commencement Program.

(This policy became effective for all students whose first enrollment in an institution of higher education was on or after May 15, 1979.)

## Examinations and Reports

### Courses

As a rule courses extend through one semester only, although some are of a year's duration. No credit will be given for less than an entire course except by special order of the Committee on Academic Standards. Grades given at the end of the first semester in courses extending throughout the year are merely indicative of the quality of work done by the student to that point and do not give credit for the part of the course so far completed. Such first-semester grades may be considered in determining the final grade, however.

Summer sessions courses carry the same credit value as courses offered in regular semesters.

## **Evaluation of Student Progress**

Measurement and evaluation of learning, consistent with the objectives of the course, provide opportunity for the student and the teacher to evaluate progress through a variety of methods. Evaluation by final examination alone is discouraged.

Students are responsible for all materials presented or assigned in scheduled instructional sections. Failure to complete all assigned work may result in a report of I or a grade of F at the discretion of the instructor.

Final examinations are held during the last two days of each semester of the academic year and during the last two days of each summer session. A listing in the *Schedule of Courses* each semester sets the time for final examinations.

The only tests permitted during the week of classes preceding finals will be in evening classes, practical laboratory tests, make-up examinations, and regularly scheduled short quizzes.

## **Absence from Examinations**

The student is required to take all regular examinations. If a student attends a course throughout the semester and is absent from the final examination without permission, the instructor shall count the examination as zero and report the final grade as F. If, in the opinion of the instructor, absence of the student was for satisfactory reason, the grade of I may be reported.

A student who has been absent because of illness, authorized University activities, or other reasons approved by the student's dean, has the opportunity to make up regularly scheduled examinations.

## **Grade Reports**

In the seventh week of classes of each semester, instructors in all undergraduate courses shall submit a report of students doing unsatisfactory work; that is, earning grades of D or F. These grades are used for counseling and are not recorded on the student's permanent record in the Office of Admissions and Records. These reports are sent to the Dean of Admission and Records or a representative and this information is transmitted to the student, parent or guardian, adviser, and dean of the college or school.

Final grades are reported by instructors directly to the Office of Admissions and Records within 48 hours after the closing of the examination. The rule also applies to the final grades of all students registered in other colleges and schools of WVU who are enrolled in law courses.

The final standing of all seniors provisionally approved for graduation at the close of the second semester shall be reported by their instructors to the deans of their colleges and schools, and the final standing of all graduate students provisionally approved for graduation shall be reported to the Associate Vice-President for Graduate Studies and Research. Special report cards are supplied by the Dean of Admissions and Records.

A report of each student's work is made at the close of the semester or summer session to the student or to the student's parents or guardian.

# **Grading, Absences, Academic Standing, Probation, Suspension, Reentry, Withdrawals**

## **Grading System**

- A — excellent (given only to students of superior ability and attainment)
- B — good (given only to students who are well above average, but not in the highest group)
- C — fair (average students)
- D — poor but passing
- F — failure
- I — incomplete
- W — withdrawal before the end of the fifth week of a semester or withdrawal doing satisfactory work thereafter
- WU — withdrawal doing unsatisfactory work (after the fifth week of a semester)
  - P — pass (see Pass-Fail Grading below)
  - X — auditor, no grade and no credit
- CR — credit but no grade
- PR — progress. Final grade at end of the second semester (Medical Center)
- S — Satisfactory
- U — Unsatisfactory (equivalent to F)  
[in certain approved graduate courses]

## **Pass-Fail Grading**

The basic purpose of pass-fail grading for undergraduates at WVU is to promote the undertaking of elective courses unrelated to the student's fields of degree concentration. A secondary purpose of pass-fail grading is to facilitate student grading in performance or competency based courses which may be an integral part of the student's program.

*Student Option.* Any full-time student who has completed 15 hours and maintains a 2.0 grade-point average may elect to take a maximum of 4 hours each semester or each summer session in which the grade earned will be either P (pass) or F (fail). The courses taken for pass-fail grading must be free electives and shall not exceed a total of 18 hours of credit. Unless otherwise indicated, excluded are courses in the student's major, courses in other subjects that are required by the major, and courses taken to satisfy either University, college, or school requirements. For example, courses elected to satisfy the English, Core, or Foreign Language requirements may not be taken for pass-fail grading.

The student electing the pass-fail grading option will be graded as a regular student and the appropriate letter grade will be submitted to the Office of Admissions and Records. The Office of Admissions and Records shall convert the earned letter grade to P-F on the basis of A, B, C, or D for a pass, and F for a fail.

The selection of a course for pass-fail grading must be made at registration and may not be changed after the close of the registration period.

*College or School Option.* A department or unit may designate any performance or competency based course which, with approval of the college or school and the University Senate, may be offered exclusively as P-F. Such



courses offered only as P-F shall not be included in the maximum of 18 hours that may be freely elected under the student option.

*(This revised policy became effective as of the beginning of the First Semester, 1977-78, for grading under the Student Option.)*

### **Grade Points**

Grade points are based on the following grade-point values for each semester of credit:

A	B	C	D	F	I	U
4	3	2	1	0	0	0

The grade-point average is computed on all work for which the student has registered with the following exceptions:

(a) Courses with W, WU, P, S, and X.

(b) If an undergraduate student earns a grade of D or F in any course at WVU taken no later than the semester or summer session registration when a cumulative total of 58 hours has been attempted, and if this course is repeated in residence at WVU, one time only, the lower grade shall be disregarded for the purpose of determining the student's grade-point average, hours passed and hours attempted, and the higher grade earned for this course shall be used in determining the student's grade-point average, hours passed and hours attempted. The first grade recorded shall not be deleted from the student's record and the second grade will be entered marked repeat, in the semester when taken. The repeat shall be completed no later than the semester when taken. The repeat shall be completed no later than the semester or summer session registration when a cumulative total of 70 hours has been attempted. (Effective Date: For students enrolled for the first time at West Virginia University for a session after May 15, 1979.) Provided, however, that when a student receives a grade of I and later removes the incomplete grade, the average grade-point standing shall be calculated on the basis of the new grade.

If the final grade of a student in any course is F, the student must take the course again in residence at WVU if the student desires to receive credit for it, unless the dean of the college or school authorizes the exception. The grade of I is given when an instructor believes that the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of I must be removed within the following semester or the next semester in which the student is in residence, and becomes a failure unless special permission is granted by the appropriate Committee on Academic Standards to postpone removal.

For teacher certification the student is responsible for every registration in a course for which a grade of A, B, C, D, F, WU, P, or I is received.

### **Absences**

Students who are absent from class for any reason are responsible for work missed.

Students should understand that absences may jeopardize their grades or continuance in the course.

Instructors who use absence records in the determination of grades must announce this fact to students (in writing) within the first five class meetings.

It is the responsibility of the instructor to keep an accurate record of all students enrolled.

Instructors may report excessive absences to the student's dean or adviser.

Students who have been absent because of illness, authorized University activities, or other reasons approved by their deans, have the opportunity to make up regularly scheduled examinations.

## **Probation, Suspension, Reentry Policy**

### **Uniform Probation**

Any undergraduate student whose cumulative average is 2.0 or higher is in good academic standing in the University. Every baccalaureate degree requires a minimum grade-point average of 2.0 for graduation. (Nothing in this statement prevents a unit from requiring a minimum grade-point average above 2.0, or other academic requirements.)

Students whose cumulative grade-point average is below 2.0 will be notified on semester grade reports that their academic performance is unsatisfactory. Such students may be subject to probation by the dean of their college or school. Students are not on probation until notified, in writing, by their dean, who will establish the terms of their probation.

### **Uniform Academic Suspension Regulations**

The student whose cumulative grade-point deficiency exceeds the "allowable grade-point deficiency" (see Table) is subject to suspension. Normally, students will be suspended only at the end of the academic year; students exceeding the maximum allowable grade-point deficiency at other times may be put on probation or otherwise warned. However, nothing in this provision shall prevent a dean from suspending a student at any other time of the year if the student's grade-point deficiency exceeds the allowable maximum.

Academic suspension identifies the status of a student who has failed to meet the University minimum standards and who has been notified formally by the dean of the college or school of academic suspension. Action on academic suspension is to be taken by the appropriate dean at the end of each semester and such action is to be based on a special report from the Dean of Admissions and Records. The sequence of events in bringing about this action is:

1. The Dean of Admissions and Records will forward a special report at grade-reporting time to the college or school deans for appropriate action.
2. The Dean of Admissions and Records will provide the Vice-President for Academic Affairs and Research with a list of students subject to suspension in each college or school.
3. Deans will report to the Vice-President for Academic Affairs and Research the action taken on the students reported to them for academic suspension by the Dean of Admissions and Records.

Deans have the authority to waive suspension in favor of probation if in their judgment the circumstances of individual cases so warrant. The suspension rule will be set aside only under extraordinary conditions.

Suspension from the University means that a student will not be permitted to register for any classes, including those in summer sessions, offered by the University for academic credit until the student has been officially reinstated. The normal period of suspension is a minimum of one academic semester, but will not exceed one calendar year from the date of suspension.

Students who have been suspended may petition the Committee on Academic Standards of the college or school to which they wish to be

### MAXIMUM ALLOWABLE GRADE-POINT DEFICIENCY\*

Total Hours Attempted**	Maximum Grade-Point Deficiency**	Total Hours Attempted**	Maximum Grade-Point Deficiency**
0-19	20	55-59	12
20-24	19	60-64	11
25-29	18	65-69	10
30-34	17	70-74	9
35-39	16	75-79	8
40-44	15	80-84	7
45-49	14	85 or more	7
50-54	13		

\*The grade-point deficiency is the difference between the number of grade points needed for a 2.0 average and the number of grade points that a student has actually earned in all courses attempted.

\*\*Includes all hours attempted in institutions in the West Virginia System of Higher Education excluding grades of P, exclusive of the D-F Repeat Policy.

readmitted in care of the dean. The normal periods for consideration of petitions are October 1-November 15 and March 1-April 15 of each academic year.

A student who has been suspended for academic deficiencies and who takes courses at other institutions during the period of suspension cannot automatically transfer such credit toward a degree at WVU upon readmission to the University. After one semester of satisfactory performance (C average or better on a minimum of 12 credit hours earned during a regular semester or during the summer sessions) the appropriate transfer credit will be entered into the student's record upon certification by the adviser and dean that the above conditions have been met.

#### **Readmission After Suspension**

During the semester immediately following the effective date of suspension, suspended students may petition in writing for readmission. The college or school petitioned shall establish the terms of readmission for successful student petitioners.

After one calendar year from the effective date of suspension any student who has been once suspended shall, upon written application, be readmitted to the University, with the terms of readmission to be established by the college or school entered by the readmitted student.

A suspended student who is readmitted under the provisions above will be placed on academic probation and will be subject to the maximum grade-point deficiency regulations as before, unless the terms of probation agreed to by the student require otherwise. Each college or school will have the right to establish minimum levels of performance expectations.

(Effective: August 15, 1980, for all students.)

## **Withdrawals**

### **Withdrawal From Class**

*Deadlines:* Until the Friday of the tenth week of class (or Friday of the fourth week in a six-week summer session, or Friday of the second week of a



three-week summer session), students may withdraw from individual courses. Deadlines will be published in the *University Schedule of Courses* each semester.

*Procedures:*

1. Before withdrawing from individual classes, students are responsible for consulting their advisers to determine:

(a) Whether their course loads would be reduced below the minimum requirements set by their colleges or schools (if so, permission of the Committee on Academic Standards of the respective college or school is required *before* the course adjustment form may be submitted); or

(b) Whether their course loads would be reduced below the minimum number of hours required to qualify for special status, e.g., financial aid, varsity athletic competition, or international full-time student status; or

(c) Whether the courses to be dropped are required to fulfill academic probationary conditions; *and/or*

(d) Whether the courses from which they desire to withdraw might be

(1) Corequisite with other courses they are taking; or

(2) Prerequisite to other courses required for the next term.

2. Students must obtain adviser signatures on the University course adjustment forms and then submit the forms to the Office of Admissions and Records.

3. Students who withdraw from courses following all the established University procedures before the published deadline will receive a W on the transcript for the appropriate courses. Grade-point averages are not affected in any way by this mark.

## **Withdrawal From the University**

*Deadlines:* Students may withdraw from the University *any time before the last day* on which regular classes are scheduled to meet. Students who withdraw from the University before the Friday of the tenth week of classes (or the Friday of the fourth week in a six-week summer session, or the Friday of the second week of a three-week summer session) will receive grades of W in all their courses for that semester or session. Students who withdraw after these deadlines will receive grades of W in those courses in which satisfactory progress had been made; they will receive grades of WU for courses in which progress had been unsatisfactory.

*Procedures:*

1. Students who decide to leave WVU should withdraw from all classes and must do so in accordance with established University policy. Students are responsible for all *financial obligations* and for following established procedures, including the completion of forms and the delivery of the completed forms to appropriate officials. The withdrawal becomes official only after the forms have been recorded by the Dean of Admissions and Records.

2. Students who are unable to withdraw in person because of illness, accident, or other valid reasons, still must send to the Division of Student Affairs notification of their intention to withdraw. The notice should be verified in writing.

3. Students who desire to withdraw from WVU must obtain a withdrawal form from the Student Affairs office (or dean's office of an off-campus instructional unit). Withdrawal procedure will be explained at that time.

4. With the help of their academic advisers, students are responsible for determining how withdrawal from the University may affect their future status with the University, including such aspects as suspension for failure to make progress toward a degree or violation of established academic probation and eligibility for scholarships, fellowships, or financial aid.

### **Re-Enrollment After Withdrawal**

An undergraduate student who withdraws from WVU in two consecutive semesters (excluding summer sessions) may not register for further work without approval of the dean of the college or school in which the student wishes to register and subject to conditions set by that dean.

## **Advisers, Committee on Academic Standards**

### **Advisers**

Each student entering WVU is assigned an adviser whose duty is to assist students in preparing schedules, assign them to classes, and certify their study lists to the Dean of Admissions and Records. The advisers are expected to give such advice and sympathetic guidance as the students may need in their work at the University. Students are expected to go freely to their advisers to discuss problems.

Advisers, upon receipt of reports of excessive numbers of absences, shall have conferences with the student concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, the case shall be reported to the dean of the college or school.

### **Committee on Academic Standards**

The Committee on Academic Standards of each college or school shall have authority to proceed according to its best judgment in regard to students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In exercising its authority the committee shall not suspend a student during a semester except for willful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college or school.

### **Cheating**

The academic development of students and the overall integrity of the institution are primary responsibilities of West Virginia University. Cheating is condemned at all levels of life, indicating an inability to meet and face issues and creating an atmosphere of mistrust, disrespect, and insecurity. In addition, it is essential in an academic community that grades accurately reflect the attainment of the individual student. Faculty, students, and administrators have shared responsibilities in maintaining the academic integrity essential for the University to accomplish its mission.

## **Responsibilities**

Students should act to prevent opportunities for cheating to occur, and in such a manner to discourage any type of cheating.

Faculty members are expected to remove opportunities for cheating, whether related to test construction, test confidentiality, test administration, or test grading. This same professional care should be exercised with regard to oral and written reports, laboratory assignments, and grade books.

Deans and department chairpersons are expected to acquaint all faculty with expected professional behavior regarding academic integrity, and to continue to remind them of their responsibility. Deans and department chairpersons shall assist faculty members and students in handling first-offense cheating allegations at the lowest possible level in the University, and with discretion to prevent damage to the reputation of any person who has not been found guilty in the prescribed manner.

Each member of the teaching faculty and all other WVU employees, including but not limited to assistants, proctors, office personnel, custodians, and security officers, shall promptly report each known case of cheating to the appropriate supervisor, department chairperson, or dean of the college or school concerned.

## **Cheating Defined**

Cheating is defined to include any of the following:

1. Obtaining help from another student during examinations.
2. Knowingly giving help to another student during examinations.
3. The use of notes, books, or any other source of information during examinations, unless authorized by the examiner.
4. Obtaining without authorization an examination or any part thereof.
5. Plagiarism: submitting for credit, without appropriate acknowledgment, a report, notebook, speech, outline, theme, thesis, dissertation, or other written, visual, or oral material that has been knowingly obtained or copied in whole or in part from another individual's academic composition, compilation, or other product, or commercially-prepared paper.
6. Altering, or causing to be altered, the record of any grade in a grade book, office, or other record.
7. Taking an examination or doing academic work for another student, or providing your own work for another student to copy and submit as his/her own.
8. Presenting false data or intentionally misrepresenting one's records for admission, registration, or withdrawal from the University or from a University course.

## **Procedure for Handling Cheating Cases**

*Step 1.* At the discretion of the student, faculty member, and chairperson of the department, some cases involving cheating where there is an admission, in writing, of guilt by the student may be satisfactorily resolved at the departmental level. The maximum penalty at Step 1 is an F in the course. Whenever a penalty is administered, the facts of the case shall be reported in writing to the dean of the college or school, and a copy forwarded to the Vice-President for Student Affairs for the Vice-President's permanent records. In cases wherein cheating occurs in a college or school other than that in which the student is a degree candidate, the results of the case shall be reported to the dean of the college or school in which the student involved is enrolled.



Step 2. When the student denies guilt, or the faculty member or department chairperson feels the penalties available at Step 1 are insufficient for specific act, the dean of the college or school in which the course is offered shall be notified in writing of the specifics of the case. The dean shall then implement the following steps:

a. Formal notification to the student of the charges and the nature of the evidence, which if proved would justify action.

b. Opportunity for the student and witnesses to respond in writing, rebutting the charges.

c. Opportunity for the student to request that the case be forwarded by the dean to the WVU Student Discipline Committee (Step 3).

d. If the student admits guilt in a signed statement to the dean, or is found guilty, the dean shall prescribe the penalty deemed appropriate. Allowable penalties for Step 2 include F in the course, written reprimand, and probation. The dean shall promptly report thereon in writing to the President of the University and shall at the same time place a copy of such report in the permanent record of the student concerned and forward another copy to the Vice-President for Student Affairs for his records. A copy of such report will also be forwarded to the dean of the college or school in which the student is enrolled. The purpose of this copy of the report is to provide information in the event that further discipline or penalty may be deemed warranted by the dean of the college or school in which the student is a degree candidate. These records will be maintained by the deans until the student graduates, at which time the records will be destroyed.

e. The dean shall have the prerogative to refer any first-offense cheating case to the WVU Student Discipline Committee. If the cheating allegation is a second offense, it shall be referred automatically to the WVU Student Discipline Committee (Step 3) for action under its guidelines.

Step 3. The WVU Student Discipline Committee shall handle cases on cheating referred by a dean or requested by a student. The case must be heard using the Committee on Student Discipline guidelines. If the committee finds the student guilty of cheating, it will recommend the penalty it deems appropriate under the circumstances to the President of the University and to the appropriate deans. Allowable sanctions in these cases include, but are not limited to, probation, suspension, or expulsion.

## **Appeal**

The student may appeal to the President of the University any and all decisions of a dean, department chairperson, or Student Discipline Committee, in accordance with standard operating procedures as spelled out in the President's statement on due process of January 29, 1971. Appeals in regard to decisions made by the University's President may be taken to the Board of Regents.

## **Criminal Act in Connection With Cheating**

If a student admits in writing that he/she has been guilty of cheating, or is found guilty of cheating by the Student Discipline Committee, in a case involving what is believed to be a criminal offense—such as theft of an examination or test materials, alteration of records, forgery, breaking or entering buildings, offices, desks, safes, or filing cabinets, damage to property, and other similar misconduct—the academic penalties and discipline as herein prescribed shall be applied. In addition, the facts of the case will be presented to the appropriate prosecuting attorney for further investigation and for such criminal or other action as may be warranted.

# Medical Center Basic Sciences— Programs and Courses of Instruction

The Department of Anatomy, Biochemistry, Microbiology, Pharmacology and Toxicology, and Physiology offer individual graduate programs leading to the M.S. and Ph.D. degrees and provide courses for students of medicine, dentistry, pharmacy, nursing, and other allied health professions.

(Detailed information concerning graduate studies academic information is presented in the *WVU Graduate Catalog*.)

## Anatomy

The Department of Anatomy offers graduate programs which are committed to the training of competent researchers and capable teachers. This is accomplished by the completion of a carefully designed plan of study tailored to the individual student's interests. The program begins with instruction in basic morphological, developmental, and functional aspects of human anatomy. Additional related course work and electives are required. These selected courses strengthen the area of interest of the student. The student then conducts an original research project which culminates in a dissertation (Ph.D.) or a thesis (M.S.).

## Admission Requirements

In addition to the admission procedure of the Graduate School, the Department of Anatomy requests that each applicant complete a departmental application form obtained from the department. After an application is favorably reviewed by the departmental Graduate Committee, applicants are invited for a personal interview whenever practical. The applicant is admitted by a majority vote of the departmental faculty.

It is recommended that the following courses be completed before entering the graduate program: algebra, trigonometry, general physics, inorganic and organic chemistry, general biology or zoology, comparative anatomy, embryology, genetics, cell biology or general physiology, and two years of French, German, or Russian. At the discretion of the department, a student may be allowed to complete a limited number of prerequisites after enrolling in the program. A grade-point average above 3.0 is desirable. The aptitude portion and an advanced section of the Graduate Record Examination are generally required. Also, three letters of recommendation from persons who can best evaluate the applicant's potential for graduate study should either accompany the application or be mailed to the Department of Anatomy separately. Applicants desiring consideration for financial aid should complete the application process before January 15.

## Doctor of Philosophy

The first year of study usually consists of required course work within the Department of Anatomy. These courses include gross anatomy, microanatomy, neurobiology, introduction to research, and seminar in anatomy. Required courses in other basic medical sciences, such as biochemistry and physiology, are usually taken in the second year. Twelve hours of additional graduate-level courses are also required. These

requirements will have been satisfied when the student earns a grade of at least B in each of the courses taken in the Department of Anatomy and has maintained a required 2.75 overall grade-point average.

To be admitted to candidacy for the Ph.D. degree the student must satisfy the above requirements, pass a written and oral comprehensive preliminary examination, and prepare a plan for a research project to be undertaken for the dissertation. To be recommended for the Ph.D. degree each student must complete a dissertation based on original research and defend the dissertation at an oral examination.

This program allows flexibility for each student. The precise plan of study is designed by the student and an Advisory Committee, which is composed of faculty members selected by the student.

The student often culminates the training period with presentations at regional and/or national scientific meetings. The Southern Society of Anatomists and the American Association of Anatomists are the most suitable meetings for this purpose.

## **Master of Science**

The master's program in anatomy is offered as a terminal degree only for students in certain specialized fields, such as physical therapy or in a conjoint program in dentistry or medicine. It is not necessary for the student to complete the M.S. degree in order to qualify for admission into the Ph.D. program, although the student may elect to complete the requirements for this degree in progress toward the Ph.D.

An applicant who shows a special need for the M.S. degree must generally be as well qualified as applicants for the doctoral program. The M.S. student must complete courses in gross anatomy and microanatomy and 6 to 9 hours of required and elective courses. A 2.75 grade-point average must be maintained. In addition to course work, the student must complete a thesis based on original research and defend the thesis at an oral examination.

## **Research and Instruction**

*Research Areas*—Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues, and organs, under normal and experimental conditions with *in vivo* microscopic, histochemical, electron microscopic, autoradiographic, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, regeneration and the effects of drugs and other environmental agents on development. Neuroanatomy: Experimental, comparative, and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

## **Anatomy (Anat.)**

101. *Principles of Human Anatomy.* (For paramedical students only.) I. 3-4 hr. PR: Biol. 2 or equiv.; consent of instructor or chairperson. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development.
102. *Gross Anatomy.* (For physical therapy students.) II. 3 hr. PR: Anat. 101 and/or consent of instructor or chairperson. Functional gross anatomy of the back, extremities, head, and neck.
103. *Microanatomy.* (For physical therapy students.) I. 2 hr. PR: Consent of instructor or chairperson. Introductory cell and tissue structure.



109. *Oral Histology*. (For dental hygiene students.) II. 3 hr. PR: Consent of instructor or chairperson. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.
152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent of instructor or chairperson. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture. (Same as *Sociology and Anthropology* 152.)
301. *Gross and Developmental Anatomy: Trunk*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 5 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum emphasizing clinically-related concepts.
302. *Gross and Developmental Anatomy: Head-Neck*. (For medical and a limited number of regular full-time graduate students in the medical basic sciences.) I. 3 hr. PR: Medical student standing or consent of chairperson. Gross anatomical study of the head and neck emphasizing clinically-related concepts.
304. *Gross and Developmental Anatomy: Extremities*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Medical student standing or consent of chairperson. Gross anatomical and developmental study of the upper and lower limbs emphasizing clinically-related concepts.
305. *Microanatomy*. (For medical students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Medical student standing or consent of chairperson. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities*. (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 4 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the back, upper extremities, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy*. (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) II. 5 hr. PR: Dental student standing or consent of instructor or chairperson. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy*. (For students in physical therapy and a limited number of regular full-time graduate students in the medical basic sciences, and students in other health sciences.) II. 2 hr. PR: Consent of instructor or chairperson. Gross and microscopic structure of the central nervous system. (See also CC MD 375, Neurobiology.)
309. *Microanatomy and Organology*. (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 4 hr. PR: Dental student standing or consent of chairperson. Cells, tissues, and organs.
312. *Special Topics in Anatomy*. I, II. 2-4 hr. per sem. PR: Anat. 301 or 306; and Anat. 305 or 309; consent of chairperson. Different topics of current interest in anatomy that are not included in the regular graduate courses.
314. *Applied Anatomy*. I, II. 2-6 hr. per sem. PR: Consent of instructor or chairperson. Detailed study of anatomy adapted to the needs of the individual student.
315. *Craniofacial Osteology and Myology*. I. 3 hr. PR: Dental, medical, or graduate student standing or consent of instructor. Study of craniofacial embryology, morphology and physiology with special emphasis on articulations and their clinical applications.
316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: Anat. 315 or consent of instructor. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

318. *Oral Histology and Embryology*. (For dental students and a limited number of regular full-time graduate students in the medical basic sciences.) I. 2 hr. PR: Dental student standing or consent of instructor or chairperson. Structure, function, and development of oral tissues.
375. *Neurobiology*. (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
401. *Advanced Gross Anatomy*. I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, or 306, 307 and consent of instructor or chairperson. Morphological and functional analysis of a selected region, with dissection.
402. *Advanced Developmental Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301, 302, 304, and consent of instructor or chairperson. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar*. I, II. 1-6 hr. (1 hr. per sem.) (Course may be repeated.) PR: Consent of Graduate Committee. Special topics of current or historical interest.
405. *Experimental Embryology*. II. (Alternate Years.) 3 hr. PR: Embryology and cellular physiology or biochemistry and consent of instructor or chairperson. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. (Course may be repeated.) PR: CC MD 375 and consent of instructor or chairperson. Detailed study of selected areas of the nervous system.
408. *Histochemistry*. II. (Alternate Years.) 3 hr. PR: Anat. 305 or 309, biochemistry, and consent of instructor or chairperson. Histochemical theory and techniques.
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309, or Biol. 263 and consent of instructor or chairperson. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
491. *Advanced Anatomy*. I, II. 2-8 hr. PR: Consent of chairperson.
497. *Research*. I, II, S. 1-15 hr. PR: Consent of Graduate Committee. (May be repeated as needed with consent of Graduate Committee.)

## Biochemistry

Graduate programs in the Department of Biochemistry are designed to assist students in the development of their own capabilities for independent thought and research. All students are provided with a strong biochemistry background; however, the program has sufficient flexibility to allow individual students to select advanced specialty courses in biochemistry which are of particular importance to their career goals. Faculty research problems are of current interest and are diverse, reflecting the broad spectrum of areas encompassing biochemistry. Specific major areas of research in the Department of Biochemistry include: elucidation of specific mechanisms of enzyme catalysis; protein conformation changes induced by metals; cytochrome P-450 oxidative processes; characterization of immune complement interaction with red cell membranes; investigations into microbial infection processes; membrane alteration during differentiation in the cellular slime mold; hormonal regulation of animal cell metabolism; control of secretory processes; tRNA synthesis and maturation; regulation of mammalian cell growth; control of eukaryotic DNA syntheses; and carcinogenesis; energy-coupled ATP synthesis/hydrolysis.

## **Admission Requirements**

A prospective graduate student should hold a bachelor's degree with a science major and should have successfully completed the following courses in qualitative-quantitative chemical analysis, organic chemistry, calculus, physics, and physical chemistry. In some cases, a deficiency in the above may be made up after admission into the program.

Application is made by submission of the following items to the Department of Biochemistry: (a) the completed departmental application form (sent on request); (b) three letters of recommendation from professors who can evaluate the student's present abilities and potential; (c) official transcript of the applicant's college grades; and (d) official copy of Graduate Record Examination scores. Owing to the sequence of courses, entrance in the fall is preferred, but exceptions may be made as necessary. Application material and program details may be obtained by writing: The Graduate Coordinator, Department of Biochemistry, School of Medicine, West Virginia University, Morgantown, WV 26506. The deadline for receipt of applications and supporting documents by the department is June 1; to be considered for financial support, applications should be submitted much earlier, preferably by February 1.

## **Doctor of Philosophy**

To assure that all students become familiar with the basic principles of biochemistry, the first year of the Ph.D. program is devoted primarily to course work. In addition to formal courses during the first semester, students participate in a laboratory program which involves all faculty members. This laboratory experience is designed to illustrate the basic research skills involved in biochemistry. During the second semester, students will undertake research in at least two laboratories of their choice. During the first two years, the students are also given monthly cumulative examinations, designed to assure the faculty that the students are developing a working knowledge of the field of biochemistry appropriate to a doctoral candidate. Students are required to pass twelve cumulative examination questions during this period to fulfill the written examination requirement for the Ph.D.

Upon successful completion of the first year, students will choose a dissertation research adviser, at which time emphasis will be placed on research under the direction of the research adviser. During the second year, specialized courses in biochemistry will be offered as the students continue their research programs. During subsequent years, the students emphasize independent thesis research, and a few formal courses are taken.

An essential component of the Ph.D. program is participation in departmental journal clubs and seminars. Both students and faculty participate, thus students learn to effectively organize and present research material to a large group of people.

Completion of the Ph.D. program is realized when the student successfully presents the research results to both the Department of Biochemistry and a graduate advisory committee. Typically, four years are required to realize this goal.

## **Master of Science**

The Department of Biochemistry offers the thesis master's degree. This program involves completion of a master's research project in addition to formal course work. The program for this degree is essentially identical to



that for the Ph.D. program; however, only six cumulative examination questions must be passed, and thesis-level research completed.

## Research and Instruction

**Research Areas**—Hormonal regulation of hepatic carbohydrate metabolism. Enzyme kinetics. Lipid metabolism and biogenesis of membranes. Structure and transfer RNA; RNA synthesis in mammalian cells. Atherosclerosis. Physical chemistry of proteins. tRNA methyltransferases in normal and tumor systems. Influence of nutrition on tissue protein and amino acid metabolism. Chemistry of host-parasite relationship. Interaction of macromolecules in biological systems. Physical biochemistry. Nutritional oncology. Immunochemistry. Mechanisms of enzyme action. Energy-coupled ATP synthesis/hydrolysis. Role of hormones on secretory mechanisms.

## Biochemistry (Bioch.)

- 139. *Introduction to Biochemistry*. I. 4-5 hr. PR: General chemistry. (For medical technology and pharmacy students; others by consent.) Lecture and conference, 4 hr.; Laboratory, 1 hr.
- 192. *Selected Topics in Biochemical Research*. I, II, S. 1-6 hr. (May be repeated for a maximum of 12 hr.) PR: Consent.
- 231. *General Biochemistry*. I. 7 hr. PR: General chemistry, organic chemistry. (For medical students.) Consists of seven main lectures, one clinical correlation lecture and one problem session per week.
- 239. *Clinical Chemical Techniques*. II. 4 hr. PR: Bioch. 139, 231 or equiv. (Primarily for medical technology students; open to other qualified students by consent.)
- 305. *General Biochemistry*. II. 4 hr. PR: General chemistry, organic chemistry, and consent. (For dental and graduate students.) Lecture, conference, and demonstration.
- 310 / 312. *General Biochemistry*. (Offered in conjunction with the Department of Agricultural Biochemistry.) I, II. 8 hr. PR: General chemistry, organic chemistry. (For graduate students in basic science programs.)
- 399. *Special Topics*. I, II. 1-2 hr. PR: Consent.
- 423. *Immunochemistry*. II. 2 hr. PR: Consent. Chemistry and biochemistry of antibodies, antigens, and complement.
- 491. *Advanced Study*. I, II. 1-6 hr. PR: Consent. Physical techniques in biochemistry; nucleic acids and protein biosynthesis; enzymology and protein chemistry; metabolic regulation (each topic—one semester). Designed primarily to provide a background for students who will do research in biochemistry and molecular biology. Emphasis will be on basic principles, concepts, and modern techniques useful for the solution of important biological research problems.
- 496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Presentation and discussion of special topics.
- 497. *Research*. I, II, S. 1-15 hr.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

### Conjoined Basic Sciences Courses (CC MD)

- 320. *Electron Microscopy*. II. 2-4 hr. PR: Consent. For graduate students, upperclass students in the sciences, medical students.) Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.

350. *Radiation Safety and Isotope Usage*. II. 1-2 hr. PR: Phys. 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; ERDA (formerly AEC) and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
370. *Medical Genetics*. (For medical and limited number of graduate students.) II. 1 hr. PR: Consent. Genetics and heritable diseases in man.
375. *Neurobiology*. (For medical and limited number of regular full-time graduate students in the medical basic sciences.) II. 6 hr. PR: Anat. 301 and Physi. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
399. *Selective Experiences in Medicine*. (Fourth Year.) I, II, S. CR. PR: Satisfactory completion of the first three years of medical curriculum. (Graded as S or U.) The selective program for fourth-year medical students offers a wide range of opportunities in the basic sciences, medical specialties and subspecialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the Charleston Division, WVU Medical Center; the Wheeling Division, School of Medicine; and the Veterans Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans the individual program, with faculty advice. Flexibility is permitted. With consent of the instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See intramural and extramural folders, published annually, that describe the selective opportunities.)

## Microbiology

The Department of Microbiology offers programs of study leading to the degrees of Master of Science and Doctor of Philosophy in Medical Microbiology. Students are given extensive training in microbiological research methodology. The program aims towards training students capable of designing and carrying out their own research programs and teaching microbiology.

## Admission Requirements

Applicants must have had at least four upper-level courses in the biological sciences, two semesters of organic chemistry, two semesters of physics, and a strong background in mathematics—including calculus—in order to be considered for admission. Applicants must submit to the Department of Microbiology a departmental application form, three letters of recommendation, and Graduate Record Examination (GRE) scores—both aptitude and advanced. In addition, transcripts and an official application for admission must be sent directly to the WVU Office of Admissions and Records. Applicants for admission to a degree program should have a grade-point average of 3.0, or better, and a score of 600, or above, on each of the GRE examinations. Early application is encouraged. Applicants desiring financial aid should complete their application before January 1. All applications must be completed by June 1. Applications for admission in the spring semester must be completed by November 1.

## Program Requirements

Every student must take courses or demonstrate proficiency by examination in each of the following areas: Microbiol. 310; 317-F; 491—

Microbial Metabolism and Microbial Metabolism Laboratory. Two semesters of biochemistry are required. Seminar is a required course for all students each semester that they are in residence. All students in the Department of Microbiology are also required to participate in teaching at least one semester a year. The remaining courses are selected by the student and the advisory committee from courses in microbiology numbered M. Bio. 317 or higher, and from outside the department.

The Department of Microbiology also has informal noon-hour journal clubs in immunology, virology, and bacteriology and parasitology.

The Master of Science program requires 30 hours of course work, of which at least 20 hours must be in microbiology. Six hours must be in research. A thesis representing original research and a final oral examination are required. A grade-point average of at least 3.0 must be achieved. In general, two years are needed to complete the M.S. program.

The Doctor of Philosophy program requires a dissertation representing the results of an original research investigation, and passing of qualifying and final oral examinations. Appropriate course work with a grade-point average of 3.0 is also required. Where appropriate, course work in related subjects such as computer science, physical chemistry, and statistics will be required. Three years are usually needed to complete the Ph.D. program.

For additional information, write to the Chairperson, Department of Microbiology, WVU Medical Center, Morgantown, WV 26506.

## Research and Instruction

*Research Areas*—Pathogenic Bacteriology: mode of action of microbial products in pathogenicity; identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: nutrition and metabolism of a variety of pathogenic microorganisms; growth and protein synthesis in obligate intracellular bacteria. Genetics: basic studies on the mechanisms of genetics including transfer of genetic information; recombinant DNA studies. Virology: basic and molecular studies of polyoma virus replication; virus-induced antigens in transformed cells; pathogenesis of lymphocytic choriomeningitis virus; bacteriophage-host interactions. Parasitology: host-parasite relationships between helminth parasites and insects and vertebrate hosts; endosymbionts in protozoa. Electron Microscopy: cytological studies of the fine structure of microorganisms and the influence of environment on these structures. Immunology: studies on the mechanisms of antigen-antibody reactions and the development of hypersensitivity; immunopathology of pulmonary disease; mechanisms of cellular immunity. Other programs: detection of environmental pollutants; effect of environmental agents on host resistance.

## Microbiology (M. Bio.)

- 26. *Microbiology*. (For students in the paramedical sciences.) I. 4 hr.
- 220. *Microbiology*. (For pharmacy students.) II. 4 hr. PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
- 223. *Microbiology*. (For medical technology students; graduate students with consent.) II. 5 hr. PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
- 224. *Parasitology*. (For medical technology students.) II. 4 hr. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.



301. *Microbiology*. (For medical students only.) I. 5-7 hr. Detailed study of pathogenic microorganisms. Emphasis on use of microbiology in solving clinical problems.
302. *Microbiology*. (For dental students only.) I. 5 hr. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
310. *Structure and Activities of Microorganisms*. I. 2 hr. PR or Conc: Biochemistry; consent. Structure and function of microbes.
317. *Special Problems in Microbiology*. I or II, S. 1-7 hr. per sem.
  - A. *Special Problems in Basic Immunology*. 2 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - B. *Special Problems in Basic Microbial Genetics*. 2 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - C. *Special Problems in Pathogenic Bacteriology*. 1 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - D. *Special Problems in Medical Virology*. 1 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - E. *Special Problems in Medical Mycology*. 1 hr. PR or Conc.: M. Bio. 310; biochemistry; consent.
  - F. *Special Problems in Parasitology*. 1 hr. PR or Conc.: M. Bio. 310. 310; biochemistry; consent.
327. *Parasitology*. (For graduate students.) II. 4 hr. PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*.
  - Pathogenic Virology*. I. 3 hr. PR: M. Bio. 310 and 317D or equiv., consent. Pathogenesis of medically important viruses and mechanisms for their control. (Course will not be offered in 1983-84.)
  - Pathogenic Bacteriology*. II. 3 hr. PR: M. Bio. 310, 317C or equiv., consent. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease. (Course will not be offered in 1983-84.)
  - Clinical Laboratory Bacteriology*. I, II. 2-4 hr. PR: M. Bio. 310, 317C or equiv., consent. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. Laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)
  - Microbial Genetics*. I. 4 hr. PR: M. Bio. 310, 317B or equiv., consent. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.
  - Microbial Metabolism*. I. 2 hr. PR: M. Bio. 310, biochemistry, consent. Physiology, metabolism, and regulation of representative microbial groups.
  - Microbial Metabolism Laboratory*. I. 1 hr. Open to departmental graduate students only. Research techniques in metabolic regulation.
  - Immunobiology*. II. 2 hr. PR: M. Bio. 317A or equiv., consent. Discussion of the biological and cellular aspects of immunology. Immunobiology, immunopathology, and cellular immunology receive strong emphasis. (This course is designed to complement Bioch. 423.)
  - Medical Mycology*. I. 4 hr. PR: M. Bio. 317E or equiv. Advanced study of the fungi of medical importance, including the pathobiology of mycoses and toxicoses.
  - Comparative Cytology*. II. (Alternate Years.) 2-6 hr. PR: Consent. Projects in electron microscopy and cytochemistry. Instruction advanced techniques. Laboratory only.

*Cell and Molecular Biology of Eukaryotes*. II. 2-6 hr. PR: Bioch. 310 and 312 or equiv., consent. Interdepartmental team-taught course. Modular approach: (1) overview and cell growth; (2) membrane structure and function (3) tumor biology. In alternate years, the three modules offered are (1) above and (4) somatic cell genetics and chromosome structure; and (5) hormone action and gene expression.

*Tumor Virology*. II. 3 hr. PR: Biol. 315 or equiv., consent. A consideration of the molecular and biochemical aspects of viruses which cause tumors and the mechanisms by which they cause cellular transformation. (Course will not be offered in 1983-84.)

*Clinical Laboratory Virology*. S. 3 hr. per 6-week session. PR: 317D or equiv., consent. Lectures and laboratories on isolation of viruses from clinical specimens. Includes serological methods.

496. *Seminar*. I, II. 1 hr. PR: M. Bio. 310 or equiv. (Graded as S or U.)

497. *Research*. I, II, S. 1-15 hr. PR: M. Bio. 310 or equiv. Students may enroll more than once. (Graded as S or U.)

## Pathology

*Research Areas*—Atherosclerosis; thrombosis; platelet aggregation and functions with correlative ultrastructural study, lipid and lipoprotein metabolism in cultured human endothelial cells; morphometric (including electron microscopic) and biochemical studies on the progression of atherosclerotic lesions in humans; regression of experimental atherosclerotic lesions; ultrastructural aspects of renal disease; ultrastructural reflections of dedifferentiation in neoplasia; histogenesis of neoplasia; biomedical application of laboratory medicine; applied laboratory studies in microbiology.

### Pathology (Path.)

128. *Introduction to Basic Pathology*. I. 2 hr. PR: Enrollment in dental hygiene or physical therapy, or consent. A study of the basic pathologic processes in man.

129. *Introduction to Oral Pathology*. II. 3 hr. PR: Path. 128, dental hygiene major, or consent. Application of fundamental knowledge of general pathology to pathological conditions that occur in the oral cavity.

328. *Basic Pathology*. (For dental students and graduate students, with consent.) II. 5 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.

338. *Oral Pathology* 1. II, S. 3 hr. PR: Path. 328, or consent. Clinical, radiographic, and microscopic discussion of local and systemic diseases affecting oral and paraoral structures.

350. *Hematology*. 3 hr. (For certain graduate students, with consent of the chairperson.) Includes morphologic description of formed elements of blood including classification of red blood cell, white blood cell, and platelet disorders. Case material and slide reviews are integral parts of the course work.

351. *Pathology and Laboratory Medicine* 1. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) I. 8 hr. PR: Medicine I Curriculum. Presents pathology as a body of knowledge and a discipline, including laboratory aspects of disease. General pathology, including cell injury, inflammation, neoplasia, thrombosis and circulatory disturbances, is followed by a systemic approach to disease states.

352. *Pathology and Laboratory Medicine* 2. (For medical students and limited number of regular full-time graduate students in medical basic sciences and consent of the chairperson.) II. 7 hr. PR: Path. 351. Continuation of Path. 351.

353. *Oral Pathology* 2. I. 2 hr. PR: Path. 338; consent. Continuation of Path. 338.

355. *Oral Disease Diagnosis and Management*. (For dental students, third year.) II. 1 hr. PR: Path. 338, 353, consent. Oral and systemic diseases are presented clinically, radiographically, and histologically. Diagnosis is established and treatment arrived at through group discussion.
356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 or 354; consent. Microscopic and gross specimens from selected autopsies.
382. *Oral Histopathology*. I, II. 1-2 hr. PR: Path. 338, 353, consent. Microscopic study of head and neck lesions.
401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.
491. *Advanced Study*. 1-3 hr. PR: Consent. Specialized study in subspecialty and such as blood banking, clinical chemistry, immunopathology. (Special lectures and/or seminar.)
497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology and Toxicology

Pharmacology and Toxicology involve all aspects of the action of drugs on living systems and their constituent parts. These range from the chemical reactions taking place within cells to the evaluation of a drug in the treatment of human disease. The Department of Pharmacology and Toxicology offers graduate studies leading to the degrees of Master of Science and Doctor of Philosophy, with research concentrations in such areas as autonomic pharmacology, biochemical pharmacology, neuropharmacology, psychopharmacology, molecular pharmacology, cardiovascular pharmacology, endocrine pharmacology, pharmacogenetics, malarial chemotherapy, immunotoxicology and renal, hepatic, and pulmonary toxicology.

## Admission Requirements

Regular applicants for the graduate program in pharmacology and toxicology should present as a minimum, the following undergraduate courses: one semester of biology; two semesters of physics; one semester of calculus; five semesters of chemistry including two semesters of organic chemistry and one semester of physical chemistry. Reading knowledge of at least one foreign language is strongly recommended. Three letters of recommendation from science professors, an official transcript, and the results of the Graduate Record Examination—including the advanced test in either chemistry or biology—are also required. The prospective student should have a minimum 3.0 overall grade-point average at the undergraduate level.

In general, students requesting financial support should have all credentials forwarded by February 1. For additional information write: Director of Graduate Studies, Department of Pharmacology and Toxicology, WVU Medical Center, Morgantown, WV 26506.

## Master of Science

Ordinarily the department does not accept graduate students solely into a master's program. However, the master's degree is offered and is available as an intermediate degree en route to the Ph.D. Its primary function, as viewed by the faculty, is as an aid to the student new to research for the formulation, conduct, and writing of an abbreviated, but complete, independent research



project (thesis). The course work requirements for the M.S. in pharmacology and toxicology usually consist of Physiology 344 and 345, Biochemistry 231, Statistics 311, Pharmacology and Toxicology 361, 363, 364, 461, 462, and 497. Most students may, with the faculty's concurrence, choose to proceed directly with their doctoral research without a master's degree. These students must submit a comprehensive progress report on their research in lieu of a thesis.

## **Doctor of Philosophy**

Before official admission to candidacy for the doctorate, the student must satisfactorily complete both a grant writing exercise and an oral comprehensive qualifying examination. When a student has submitted a grant proposal, a committee—ordinarily consisting of at least three members of the Department of Pharmacology and Toxicology and two members from outside the department—is appointed and constitutes the oral examining body. The oral qualifying examination will be administered in January of the student's third year in the program.

## **Dissertation**

Upon admission to candidacy for the degree of Doctor of Philosophy, the candidate must select a topic for the dissertation under the direction of the candidate's adviser, complete a dissertation that makes a contribution to knowledge in the candidate's area of concentration, and pass an oral examination based primarily upon the dissertation. After successful completion of the oral examination and submission of the final copy of the dissertation, the candidate will be recommended for the degree.

## **Research and Instruction**

*Research Areas* — Autonomic pharmacology: Autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release, and metabolism of transmitters and adrenal medullary hormones. Chemotherapy: Antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: Drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: Mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: Biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system. Toxicology: Metabolism of toxic agents, pulmonary toxicology, renal toxicology, immunotoxicology, and environmental toxicology, perinatal pharmacology and toxicology. Electron microscopy: Effects of drugs on the ultrastructure of cells.

## **Pharmacology and Toxicology (Pcol.)**

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
243. *Pharmacology for Pharmacy Students*. I. 4 hr. PR: Completion of first year in Pharmacy; approval of course director. Principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
360. *Pharmacology*. (For dental and graduate students.) I. 4 hr. PR: Dental student standing or consent. Lecture and demonstrations on pharmacologic actions and therapeutic uses of drugs.

361. *Pharmacology*. (For medical students and a limited number of regular, full-time graduate students in medical basic sciences departments.) II. 6 hr. PR: Consent of department chairperson. Lecture-conference-laboratory on principles, pharmacodynamic actions, and therapeutic applications of clinically useful drugs.
362. *Occupational Toxicology*. II. 3 hr. PR: Consent. General principles of toxicology with special emphasis on occupational health. Classes of chemicals which pose problems in the work place will be emphasized.
363. *Toxicology*. II. 3 hr. PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on biochemical and molecular mechanisms of chemical toxicity.
364. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of general principles of pharmacology and toxicology including physiochemical properties, absorption, distribution and metabolism of drugs, drug receptor theory, and molecular mechanisms of toxicity. (*Offered every third year.*) (*Course will be offered in 1983-84.*)
365. *Advanced Pharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures and discussion of specialized areas of pharmacology and toxicology including renal, endocrine, pulmonary, and cardiovascular pharmacology. (*Offered every third year.*) (*Course will be offered in 1984-85.*)
367. *Advanced Neuropharmacology*. I. 1-4 hr. PR: Pcol. 361 or consent. Advanced lectures on the actions of drugs on the central and peripheral nervous system. (*Offered every third year.*) (*Course will be offered in 1985-86.*)
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pcol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology and toxicology. Current literature pertinent to pharmacology and toxicology including journals of allied biological sciences.
490. *Teaching Practicum*. I, II. 1-2 hr. per sem. PR: Pcol. 361 and consent. Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology and toxicology. (For advanced graduate students.)
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology

The objective of the Department of Physiology graduate program is to educate physiologists in the methods of conducting independent research of high quality and of effective teaching. The department's graduates are conversant with all aspects of physiology and are prepared to interact creatively with scientists in related fields. To this end the program leading to the degree of Doctor of Philosophy (Ph.D.) emphasizes close interaction of faculty with students and a high faculty/student ratio. The Master of Science (M.S.) program includes 24 hours of course work and a research project leading to the thesis.

## Admission Requirements

Individuals from a wide variety of backgrounds study physiology as one of the basic medical sciences. It is, in fact, not uncommon to find physiologists with such diverse backgrounds as biology, chemistry, physics, psychology, engineering, and mathematics. The department encourages the participation of qualified individuals from many undergraduate and graduate disciplines. There are, however, certain prerequisite courses a student must take either before enrollment or during the first year of the program. These prerequisites, designed to give a student the proper foundation for advanced study in

physiology, are: Biology (2 semesters), Physics (2 semesters, calculus-based desirable), Calculus (2 semesters, 3 desirable), and Organic Chemistry (1 semester). Physical Chemistry is not required, but is desirable.

The department requires the following materials for consideration for the M.S. or Ph.D. program: Three letters of recommendation, transcripts of all undergraduate and graduate grades, a completed departmental application form, and Graduate Record Examination scores (aptitude and one advanced test). A bachelor's degree or equivalent is required for admission; an M.S. degree is not a prerequisite for the Ph.D. program.

A complete application kit and detailed descriptions of the degree programs may be obtained by writing to the Graduate Adviser, Department of Physiology, West Virginia University School of Medicine, Morgantown, WV 26506. Although applications may be submitted as late as June of the year of matriculation, applications must be received before February 1 to be considered for financial aid.

## **Doctor of Philosophy**

The first year in the program normally includes the following courses: Graduate Physiology (12 hours), Biochemistry (7 hours), Statistics (3 hours), Neurophysiology (3 hours) or Neurobiology (6 hours), Graduate Colloquium (2 hours), Physiological Methods (variable credit), electives, and prerequisites (a limited number of which may be made up during the first year). The first-year curriculum familiarizes the student with some of the same basic sciences material presented to the medical students. Graduate (medical) physiology, biochemistry, and neurophysiology/neurobiology are part of the medical curriculum. The courses are team-taught by scientists specializing in each of the areas covered. In addition, the student is introduced to the full range of activities in the department through the Graduate Colloquium. Physiological Methods provides a foundation in the research strategies, techniques, and tools used by physiologists.

During the first summer, students may begin research projects in departmental research laboratories of their choice. They also may take elective courses or make up prerequisites.

During the second year, the student combines course work with the continuing development of research interests. A graduate adviser is selected during this year. Courses normally include: Advanced Physiology (12 hours), Graduate Colloquium (2 hours), Seminar (2 hours), and the Teaching Practicum (assisting in laboratory/demonstrations, conducting small-group conference sessions, giving lectures). Commonly chosen electives include pharmacology and toxicology, and advanced or specialized topics in biochemistry. The second-year curriculum takes the student beyond the medical curriculum, emphasizing critical appraisal of the current research literature. Students begin to present discussions of research topics in the Graduate Colloquium and Seminar.

After completion of the second academic year, the student takes a qualifying examination consisting of a written comprehensive part and both a written and oral research design part. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the degree of Doctor of Philosophy in Physiology.

During the third and fourth years, the student may enroll in elective courses. Yearly participation in the Teaching Practicum provides experience in delivering lectures to undergraduate and professional students. However, the student's major effort is directed toward dissertation research, with



presentations about the research in the Graduate Colloquium. During these years the students will attend and present papers at national meetings of scientific societies (American Physiological Society, Biophysical Society, Endocrine Society, Federation of American Societies for Experimental Biology, Society for Neurosciences.) The Ph.D. program is generally completed in four years.

## Master of Science

Prerequisites for admission to the master's program are the same as those for the doctoral program. The first academic year and first summer are likewise identical for the master's and doctoral students. During the second year of the master's program, the student enrolls for 6 hours of Advanced Physiology, Graduate Colloquium, and sufficient electives to fulfill the required 24 hours of course work. In addition, 6 hours of research are directed toward completion of the thesis. The M.S. program is usually completed in two years.

## Research and Instruction

**Research Areas**—Faculty laboratories offer opportunities for research in cardiovascular, cell, endocrine, gastrointestinal, muscle, neural, renal, and respiratory physiology.

## Physiology (Physi.)

141. *Elementary Physiology*. (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lec., 1 lab.
241. *Mechanisms of Body Function*. I. 4 hr. PR: College chemistry, biology, physics, and algebra or graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relations to normal physiology.
248. *Experimental Design*. (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lec., 2 lab.
341. *Physiological Methods 1*. II. 1-5 hr. PR: Consent. Research techniques and strategies for physiology. (*Designed to be taken in conjunction with Physi. 345.*)
342. *Physiological Methods 2*. I. 1-4 hr. PR: Consent. Research techniques and strategies for physiology. (*Designed to be taken in conjunction with Physi. 344.*)
343. *Fundamentals of Physiology*. (For dental students and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lec., 1 conf., 1 lab.
344. *Medical Physiology 1*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) I. 5 hr. PR: College physics, algebra, chemistry, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 5 lec., 1 conf.-lab.
345. *Medical Physiology 2*. (For medical and a limited number of regular full-time graduate students in medical center basic sciences departments.) II. 5 hr. PR: Physi. 344 and consent of department chairperson. Continuation of Physi. 344. 5 lec., 1 conf.-lab.

346. *Neurophysiology*. (For graduate students in medical center basic sciences departments and a limited number of regular full-time graduate students.) II. 1-4 hr. PR: Math. 3 or 141, Phys. 1 and 2 or consent of department chairperson. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 1-3 lec., 1 conf.
350. *Graduate Physiology 1*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) I. 6 hr. PR: Calculus, college physics, organic chemistry, biology, and consent of department chairperson. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control.
351. *Graduate Physiology 2*. (For graduate students in the medical center basic sciences departments and a limited number of other regular full-time graduate students.) II. 6 hr. PR: Physi. 344 or 350, and consent of department chairperson. Continuation of Physi. 350.
399. *Special Topics*. I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
444. *Graduate Seminar*. I, II. 2 hr. PR: Graduate standing and consent. (*Graded as S or U.*)
490. *Teaching Practicum*. I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (*Graded as S or U.*)
491. *Advanced Physiology*. I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular physiology, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lec., 3 conf.
497. *Research in Physiology*. I, II, S. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent. (*Graded as S or U.*)
499. *Graduate Colloquium*. I, II. 1-6 hr. PR: Consent. (*Graded as S or U.*)

## School of Dentistry

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The 23 members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than 200 students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Dental auxiliary careers such as dental hygiene may be pursued. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

The School of Dentistry of West Virginia University offers programs of education leading to the degrees of Doctor of Dental Surgery, Master of Science with majors in Endodontics and Orthodontics, and Bachelor of Science in Dental Hygiene. One oral surgery internship and two oral surgery residencies are offered by the Department of Oral Surgery. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Seven general practice residencies are offered by the School of Dentistry, University Hospital, and the Charleston Area Medical Center. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by an associate dean, two assistant deans, and the clinical and medical center basic sciences chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of the University.

## Doctor of Dental Surgery Program (D.D.S.)

The School of Dentistry offers a program of education leading to the degree of Doctor of Dental Surgery (D.D.S.). The requirements for admission and the curriculum conform to the standards established by the American Dental Association Commission on Dental Accreditation.

### Admission

*Application for admission in the Fall of 1984 should be made promptly upon completion of the 1982-83 school year, even if the applicant has not completed all the requirements as listed.*

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applications are processed by that organization. Application request cards are available at the Office of Admissions and Records, 1170 Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Request cards should be submitted to AADSAS as promptly as possible. The deadline for submission of a completed AADSAS application to the AADSAS office, for admission to the West Virginia University School of Dentistry in the Fall of 1984, is November 1, 1983. This deadline is deliberately and explicitly discussed in the AADSAS instruction booklet and thus should be reviewed carefully by the applicant. Since deadline dates are so important, you are strongly urged to give this part of the application procedure your strict attention.

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Economically or culturally disadvantaged students (especially if they are West Virginia residents) are encouraged to apply.

Each applicant is required to satisfactorily complete the Dental Admission Test. It is suggested that the test be taken in April, before making application in June, for admission in the fall. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisite courses should include:

	<i>Sem. Hr.</i>
English Composition and Rhetoric, or equivalent .....	6
Zoology or Biology (with laboratory) .....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	8



Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

All applications are reviewed and those most qualified are required to appear for a personal interview. The Committee on Admissions will advise the applicants of the time and place of the interview.

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements as stated above, appropriate completion of all application instructions, submission of all transcripts from each college attended, and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding admission enrollment).

*Final acceptance of a student is contingent upon satisfactory completion of all requirements.*

## **Promotion**

At the end of each grading period (i.e., each academic semester or session) all students will have their individual progress reviewed by the academic standards committee convened for their class. The progress of each student in the curriculum is governed by a set of minimum acceptable performance standards upon which the academic standards committee bases its decisions.

The standards consist of three categories: (1) scholastic performance; (2) clinic utilization; and (3) professional development. Scholastic performance requires that each student must earn a specified grade-point average to be promoted to the succeeding year. Clinic utilization requires that each student must utilize a specified competency. Professional development is an important component of the study of dentistry. The criteria for determining this development are based on the student's personal behavior and patient management.

These performance standards are explained in detail in the "Curriculum and Academic Standards Statement for the WVU School of Dentistry." All first-year students are presented this statement prior to entering school and are required to acknowledge by their signature that they have read and accepted the conditions set by the material contained therein.

At the completion of each academic term, following the Committee on Academic Standards meetings, the status of each student is reported to the Dean and Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up deficiencies, be given the opportunity to repeat the year, be suspended or dismissed from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the appropriate Committee on Academic Standards and the Dean.

## **Requirements for the Degree (D.D.S.)**

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery (D.D.S.), provided they fully meet the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.

2. Shall have completed the prescribed curriculum for each of the academic sessions.

3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.

4. Shall have met in full all financial obligations to the University.

In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

Attendance at the spring Commencement is voluntary. If you don't plan to attend, leave the complete mailing address to where you want your diploma mailed at the Dean's Office.

## **Curriculum**

The School of Dentistry recognizes its obligation to produce professionals capable of meeting the dental health needs of society and providing leadership for the dental profession. Therefore, the school offers a four-year program leading to the degree of Doctor of Dental Surgery (D.D.S.) that provides students with a learning environment in which to develop the technical competence, intellectual capacity, and professional responsibility necessary to meet the dental health needs of a society in a state of constant transformation. In order to insure the achievement of these goals, the dental curriculum is continually reviewed and revised.

The basic required courses in the curriculum are presented throughout the first six semesters and two eight-week summer sessions. During this time all students are enrolled in courses designed primarily to prepare them for the general practice of dentistry. Throughout the program overall student progress is continually monitored by the Committee on Academic Standards. Upon satisfactory completion of the first semester of the third year, the student is provided the opportunity to indicate a specific interest in a fourth-year curriculum track. Available tracks are the general practice track, basic biologic science track, and specific clinical interest track. Upon satisfactory completion of the second semester of the third year, the faculty adviser and the student prepare a specific individualized curriculum for the fourth year. This aspect of the dental curriculum provides the opportunity for the student to pursue areas of special interest through the appropriate track, while continuing to develop competency in all clinical disciplines. Fourth-year students are required to register for at least 3 hours of electives during each semester enrolled, and must register for those clinical courses requiring added clinical experience to attain competency.

At the present time, a number of state boards of dentistry require evidence of participation in continuing education for license renewal. In addition, a significant number of state associations require similar evidence for continued membership in good standing. Consequently, fourth-year electives provide the opportunity for students to pursue areas of special interest and, at the same time, they serve as a means of encouraging students to continue their education throughout their professional careers.

The individualized curriculum developed by the student and faculty adviser must be approved by the Curriculum Committee Chairperson and the Assistant Dean for Instruction. The student will pursue the approved curriculum through completion of the D.D.S. program.

# SCHOOL OF DENTISTRY CURRICULUM PLAN

	First Year (1,200 hr.)	Summer Session (320 hr.)	Second Year (1,200 hr.)	Summer Session (320 hr.)	Third Year (1,200 hr.)	Summer Session (320 hr.)	Fourth Year (1,200 hr.)
	Basic Biologic Science	Basic Dental Science	Basic Biologic Science	Basic Dental Science	Basic Biologic Science	Bio-Clin. Sci. Comm. Dent.	Electives and Clinical Dentistry
100				Bio-Clinical Sciences	Bio- Clinical Sciences	Clinical Dentistry	
200				Comm.Dent.			
300		Clinical Dentistry	Unscheduled Time				
	Unsched.	Basic Dental Science	Unsched.	Comm. Dent.			
400							
500							
600	Basic Dental Science		Bio- Clinical Sciences		Clinical Dentistry		
700							
800							
900							
	Bio-Clinical Sciences		Comm. Dent.				
	Comm. Dent.		Clinical Dentistry				
1,000	Clinical Dentistry						
	Unscheduled Time		Unscheduled Time		Unscheduled Time		
1,100							
1,200							



Additional requirements include participation in mock board examinations by fourth-year students and six weeks of remote-site training by all students. Furthermore, students must satisfactorily complete all courses that are attempted.

Outstanding students, having accumulated grade-point averages of 3.0 or above, having developed competency in all clinical disciplines, and having met all other requirements, are eligible for consideration for graduation at the end of the third eight-week summer session.

## **Dental Clinic**

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and renders a much needed service to several thousand patients annually.

## **Books and Instruments**

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses. All dental students must maintain a library of required textbooks through graduation. Used books, instruments, and equipment are not acceptable.

## **Organizations**

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student members of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The association promotes the educational program of the School of dentistry. Full membership is extended to all graduates of the school, and associate memberships are available to others interested in the aims of the association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of the Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 percent of each senior class. Candidates are selected from the academically superior 20 percent.

*Dental Fraternities.* Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi

Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

### **Courses of Instruction in Dentistry (Dent.)**

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. (See courses 394 and 397.) Other University courses may be taken with the approval of the student's adviser and the Assistant Dean for Instruction.

#### **Community Dentistry**

Professor McCutcheon (*Chairperson*) and Thompson; Adjunct Associate Professor Murphy; Associate Professors Ingersoll, Jagannathan, and Wilson; Assistant Professors Dahlquist, Dice, and Meckstroth; Visiting Educational Specialist Hutton; Instructors Broughton, Kuhn, N. Taylor, Shelton, and Guy

- 315. *Community Dentistry 2. II. 3 hr.* A course encompassing the study of professional communication and the introduction to the theory and practice of preventive dentistry.
- 320. *Community Dentistry 1. II. 1 hr.* Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
- 326. *Community Dentistry 3. II. 2 hr.* A course covering the principles of human behavior and their application to understanding patient problems, patient management, and dentist-patient communication.
- 330. *Community Dentistry 4. I. 1 hr.* Lectures and field experience provide the student with the basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
- 332. *Community Dentistry 5. II. 1 hr.* A course providing lectures in the advanced theory and practice of preventive dentistry with emphasis on nutrition and microbiology.
- 352. *Community Dentistry 6. Yr. 2 hr.* Seminars, proseminars, and field experience in selected topics of professional communication, health education, and the sociology and psychology of community health.
- 354. *Community Dentistry 7. II. 1 hr.* PR: Departmental consent. Lectures covering the origin and development of dentistry.
- 394. *Community Dentistry 8. I, II. 1-15 hr.* Continued field experience in various aspects of community health.

#### **Dental Anatomy**

Associate Professors Foor and VandenBosche; Assistant Professors Lopez and Rodeffer.

- 310. *Dental Anatomy and Occlusion. I. 4 hr.* Anatomy of individual teeth, both permanent and primary, in regard to form and function and their static and dynamic occlusal relationships.

## Dental Materials

Professors Overberger and Gaver; Associate Professors Hart and Weaver; Assistant Professor Roth.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Dental Practice Management

Professors Puderbaugh (*Chairperson*) Thomas, and Cady; Associate Professor Walker; Assistant Professors Hickman and Lopez.

325. *Practice Management* 1. I. 1 hr. A lecture course designed to prepare dental students in the concepts of four-handed dentistry.
371. *Practice Management* 2. I. 2 hr. PR: Dent. 325. A lecture series on the fundamentals of practice management, including the organization and development of the practice, personnel and financial management, and the introduction to TEAM dentistry.
372. *Practice Management* 3. II. 1 hr. (Ethics.) Lectures and discussion on the principles of ethics applied to dental practice.
373. *Practice Management* 4. II. 1 hr. (Jurisprudence.) Lectures on the fundamental legal rights, obligations, and responsibilities of the dentist.
375. *Practice Management* 5. Yr. and S. 1-3 hr. PR: Consent. Clinical practice using auxiliaries, including those trained in expanded functions.

## Endodontics

Professors Alberico, Biddington, Griffin, and Skidmore (*Chairperson*); Associate Professors Balaban and Christian; Assistant Professors Baur and Stewart; Instructor D. Taylor.

321. *Endodontics* 1. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
362. *Endodontics* 2. I. 1 hr. Lectures on rationale, diagnosis, prevention, and nonsurgical and surgical treatment of diseases of the dental pulp and their sequelae.
380. *Endodontics* 3. Yr. and S. 1-4 hr. Clinical endodontic instruction in order to develop the skills and judgment necessary to treat diseases of the dental pulp and their sequelae.
390. *Clinical Endodontics*. I, II, S. 1-5 hr. (*May be repeated for credit.*) PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.
391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.
397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.



## Hospital Dentistry

Professors Moorman and Welch (*Chairperson*); Associate Professors Bakos and Cogan; Assistant Professors Montgomery and Mott; Instructors Black, Brace, Coffman, Courtney, Fagan, Farris, Haddox, Hancock, Jackfert, Klein, Lee, Patthoff, Payne, Salzer, Skaff, Snyder, Wilbourn, and Wine.

- 333. *Physical Diagnosis 1*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from the standpoint of history, physical examination, laboratory, and x-ray examination data.
- 347. *Management of Medical/Dental Emergencies*. II. 1 hr. Assessment and treatment of the medical risk patient as related to the practice of dentistry. CPR instruction included.
- 349. *Hospital Dentistry*. S. 1 hr. Hospital protocol and hospital dentistry as related to various dental disciplines. Students will be assigned a one-week hospital rotation where they are involved in care of the hospitalized dental patient.
- 374. *Principles of Medicine 4*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students are assigned to specific hospitalized patients to review their findings with the class.
- 395. *Hospital Dentistry Practicum*. I, II, S. 1-15 hr. Hospital experience (remote site) in the various aspects of care of the hospitalized dental patient. Provides continuation of experiences gained in Dent. 349.

## Operative Dentistry

Professors Sausen (*Chairperson*) and Gaver; Associate Professors Chapman, Foor, Frye, Hart, Jackson, VandenBosche, and Weaver; Assistant Professors Gladwin, Kelly, Naylor, Rodeffer, and Utt; Instructor Bennett.

- 304. *Operative Dentistry 1*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Gold inlay technique introduced. Characteristics and treatment of caries emphasized.
- 322. *Operative Dentistry 2*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Preparation is made for entering clinical activity. Certain fundamentals of pedodontics introduced.
- 329. *Operative Dentistry 3*. I. 2 hr. Initiation of clinical practice with comprehensive examinations and treatment planning of assigned patients. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.
- 348. *Operative Dentistry 4*. S. 1 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Treatment planning procedure is reviewed and examined.
- 358. *Operative Dentistry 5*. II. 1 hr. More complex and advanced techniques for clinical practice with emphasis on new developments throughout the scope of operative dentistry.
- 383. *Operative Dentistry 6*. Yr. and S. 2-8 hr. Instruction in the clinic setting includes comprehensive diagnosis and treatment planning, computer assisted records, plaque control, caries control, and single tooth restorations. Sufficient variety and depth of experience occurs to obtain competence for independent practice of operative dentistry.
- 397. *Special Topics*. (Fourth Year.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Diagnosis and Radiology

Professors Graham (*Chairperson*) and Thomas; Associate Professors Bowers, Pifer, and H. Smith; Assistant Professor Fotos.

- 303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral radiography. General approach to treatment planning for comprehensive health care.
- 323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.
- 327. *Oral Radiology 1*. I. 1 hr. The physical and biological phenomena associated with x-radiation. Intraoral and extraoral techniques presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
- 337. *Oral Diagnosis 2*. II. 1 hr. Didactic instruction with further application of diagnosis procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
- 387. *Clinical Oral Diagnosis 3*. Yr. and S. 1-3 hr. PR: Consent. Clinical application of principles presented in Dent. 303 and 337, providing opportunities for observation and analysis of clinical problems.
- 396. *Clinical Oral Radiology 2*. Yr. and S. 1-3 hr. Clinical application of principles presented in Dent. 303 and 327 with additional instruction in techniques and interpretation of radiographs with special emphasis to role played in oral diagnosis.
- 397. *Special Topics*. (*Fourth Year*.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Pathology

Associate Professors Bouquot (*Chairperson*) and Keyes.

- 338. *Oral Pathology 1*. (For dental students.) II. and S. 3 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
- 353. *Oral Pathology 2*. (For dental students.) I. 2 hr. PR: Consent; Dent. 338. Continuation of Dent. 338.
- 355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
- 382. *Advanced Oral Histopathology*. (For dental and graduate students, residents, and interns.) II. 1 hr. PR: Consent; Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
- 397. *Special Topics*. (*Fourth Year*.) I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
- 401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents, and interns.) I, II, S. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

## SCHOOL OF DENTISTRY COURSE SCHEDULE

First Year—Didactic Courses	Credit Hours	1st Sem.	2nd Sem.	S.
300—Anesthesiology .....	1		x	x
303—Oral Diagnostic Techniques .....	2		x	
304—Operative Dentistry 1 .....	4		x	
305—General Biochemistry .....	4		x	
306—Gross Anatomy of the Trunk and Extremities ....	4		x	
307—Gross Anatomy of Head & Neck & Neuroanatomy	5		x	
309—Microanatomy and Organology .....	4	x		
310—Dental Anatomy and Occlusion .....	4	x		
311—Periodontics 1 .....	1			x
312—Dental Materials .....	3	x		
313—Removable Prosthodontics 1 .....	3	x		
314—Fixed Prosthodontics 1 .....	1			x
315—Community Dentistry 2 .....	3		x	
316—Removable Prosthodontics 2 .....	1			x
318—Oral Histology and Embryology .....	2	x		
319—Pediatric Dentistry 1 .....	1		x	
320—Community Dentistry 1 .....	1	x		
321—Endodontics 1 .....	2			x
322—Operative Dentistry 2 .....	2			x
323—Clinic Orientation .....	1			x

### Second Year—Didactic Courses

302—Microbiology .....	5	x		
325—Practice Management 1 .....	1	x		
326—Community Dentistry 3 .....	2		x	
327—Oral Radiology 1 .....	1	x		
328—General Pathology .....	5		x	
329—Operative Dentistry 3 .....	2	x		
330—Community Dentistry 4 .....	1	x		
332—Community Dentistry 5 .....	1		x	
333—Physical Diagnosis 1 .....	1		x	
334—Removable Prosthodontics 3 .....	3	x	x	
335—Pediatric Dentistry 2 .....	2	x	x	
336—Fixed Prosthodontics 2 .....	5	x	x	
337—Oral Diagnosis 2 .....	1		x	
338—Oral Pathology 1 .....	3		x	
339—Oral Surgery 1 .....	1		x	
340—Periodontics 2 .....	1	x		
341—Removable Prosthodontics 4 .....	2			x
343—Fundamentals of Physiology .....	5	x		
345—Principles of Orthodontics .....	1		x	
346—Orthodontic Technics .....	1			x
347—Management of Medical/Dental Emergencies ....	1			x
348—Operative Dentistry 4 .....	1			x
349—Hospital Dentistry .....	1			x

### Second Year—Clinical Courses

376—Removable Prosthodontics 6 .....	2-6		x	x
377—Periodontics 4 .....	1-4	x	x	x
380—Endodontics 3 .....	1-4	x	x	x
383—Operative Dentistry 6 .....	2-8	x	x	x
384—Oral Surgery 3 .....	1-3	x	x	x
386—Pediatric Dentistry 4 .....	1-5	x	x	x
387—Clinical Oral Diagnosis 3 .....	1-3	x	x	x
389—Fixed Prosthodontics 4 .....	1-6		x	x
396—Clinical Oral Radiology 2 .....	1-3	x	x	x

### Oral Surgery

Professor Emeritus Campbell; Professor Graves (*Chairperson*); Associate Professors Davidson and Fogarty; Assistant Professors Gilbert, Haley, King, Oliverio, Van Sickels, and Wilson.



## SCHOOL OF DENTISTRY COURSE SCHEDULE (Continued)

	Credit Hours	1st Sem.	2nd Sem.	S.
<b>Third Year—Didactic Courses</b>				
347—Management of Medical/Dental Emergencies . . . . .	1		x	
350—Removable Prosthodontics 5 . . . . .	2	x	x	
352—Community Dentistry 6 . . . . .	2	x	x	
353—Oral Pathology 2 . . . . .	2	x		
354—Community Dentistry 7 . . . . .	1		x	
355—Clinico-Pathologic Correlation Conference . . . . .	1		x	
357—Fixed Prosthodontics 3 . . . . .	2	x	x	
358—Operative Dentistry 5 . . . . .	1		x	
359—Oral Surgery 2 . . . . .	2	x	x	
360—Pharmacology . . . . .	4	x		
361—Pediatric Dentistry 3 . . . . .	1		x	
362—Endodontics 2 . . . . .	1	x		
363—Periodontics 3 . . . . .	1		x	
365—Orthodontics 1 . . . . .	1		x	
371—Practice Management 2 . . . . .	2	x		
372—Practice Management 3 . . . . .	1		x	
373—Practice Management 4 . . . . .	1		x	
374—Principles of Medicine . . . . .	2	x		

### Third Year—Clinical Courses

376—Removable Prosthodontics 6 . . . . .	2-6	x	x	x
377—Periodontics 4 . . . . .	1-4	x	x	x
380—Endodontics 3 . . . . .	1-4	x	x	x
383—Operative Dentistry 6 . . . . .	2-8	x	x	x
384—Oral Surgery 3 . . . . .	1-3	x	x	x
385—Orthodontics 2 . . . . .	1-3	x	x	x
386—Pediatric Dentistry 4 . . . . .	1-5	x	x	x
387—Clinical Oral Diagnosis 3 . . . . .	1-3	x	x	x
389—Fixed Prosthodontics . . . . .	1-6	x	x	x
394—Community Dentistry 8 . . . . .	1-15	x	x	
395—Hospital Dentistry Practicum . . . . .	1-15	x	x	x
396—Clinical Oral Radiology 2 . . . . .	1-3	x	x	x

### Fourth Year—Clinical Courses

375—Practice Management 5 . . . . .	1-3	x	x	
376—Removable Prosthodontics 6 . . . . .	2-6	x	x	
377—Periodontics 4 . . . . .	1-4	x	x	
380—Endodontics 3 . . . . .	1-4	x	x	
383—Operative Dentistry 6 . . . . .	2-8	x	x	
384—Oral Surgery 3 . . . . .	1-3	x	x	
385—Orthodontics 2 . . . . .	1-3	x	x	
386—Pediatric Dentistry 4 . . . . .	1-5	x	x	
387—Clinical Oral Diagnosis 3 . . . . .	1-3	x	x	
389—Fixed Prosthodontics 4 . . . . .	1-6	x	x	
394—Community Dentistry 8 . . . . .	1-15	x	x	
395—Hospital Dentistry Practicum . . . . .	1-15	x	x	
396—Clinical Oral Radiology 2 . . . . .	1-3	x	x	
397—Special Topics* . . . . .	1-15	x	x	

\*The relationship of the number of elective and/or required hours during the fourth year may vary with each student depending upon the individual student's progress.

- 
300. *Anesthesiology*. II and S. 1 hr. Introduction to general anesthesia; lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Premedication, toxic effects, and technics of administration are discussed.
339. *Oral Surgery 1*. II. 1 hr. Didactic instruction in basic surgical principles as applied to the extraction of teeth and dentoalveolar surgery.
359. *Oral Surgery 2*. I and II. 2 hr. PR: Consent. Didactic instruction in patient evaluation, complicated exodontia, preprosthetic surgery, diagnosis, surgical and adjunctive treatment of disease, injuries, and defects of human jaws and associated structures.

384. *Oral Surgery 3. Yr. and S. 1-3 hr. PR: Consent.* Clinical instruction in outpatient and inpatient oral surgery necessary to provide comprehensive care for the dental patient.
397. *Special Topics. (Fourth Year.) I and II. 1-3 hr. PR: Consent.* Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
400. *Advanced Oral Surgery. I, II, S. 1-12 hr. PR: Consent.* Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

### Orthodontics

Professor Merow (*Chairperson*); Associate Professors Bonello and Moore; Assistant Professors Dempsey, H. E. Martin, J. R. Martin, Tatich, Valentine, and Wilfong.

345. *Principles of Orthodontics. II. 1 hr.* Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
346. *Orthodontic Technics. S. 1 hr.* Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
365. *Orthodontics 1. II. 1 hr.* Introduction to clinical orthodontics; lectures on case analysis, treatment planning, and clinical procedures involved in interceptive, preventive, and adjunctive treatment of malocclusions.
385. *Orthodontics 2. Yr. and S. 1-3 hr.* Clinical management of selected malocclusion problems.
397. *Special Topics. (Fourth Year.) I and II. 1-3 hr. PR: Consent.* Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Pediatric Dentistry

Professor Nash (*Chairperson*); Associate Professor Fenton; Assistant Professors Gwynn, C. A. Martin, and Wilkerson; Instructors Nicholson and Spagnoli.

319. *Pediatric Dentistry 1. II. 1 hr. PR: Consent.* Normal growth and development presented from physical, intellectual, psychological, and oral perspectives. Behavior of children in dental environment reviewed and strategies for management examined.
335. *Pediatric Dentistry 2. I and II. 2 hr. PR: Consent.* Didactic instruction foundational to the dental care to children presented in the following modules of instruction: growth and development, behavior management, oral diagnosis/treatment planning/case presentation, prevention, restorative dentistry, pulpal therapy, management of the development occlusion and trauma to the dentition and oral structures.
361. *Pediatric Dentistry 3. II. 1 hr. PR: Consent.* Continued didactic instruction in dentistry for the child patient with the following learning packages programmed: treatment planning considerations and applications, abnormal dental development, oral habits, and dental care for handicapped children.
386. *Pediatric Dentistry 4. I, II, S. 1-5 hr.* Instruction in the clinical setting with the goal of developing the psychomotor skills and judgment necessary to provide comprehensive care for the child patient.
397. *Special Topics. (Fourth Year.) I and II. 1-3 hr. PR: Consent.* Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### Periodontics

Professor Morrison (*Chairperson*); Associate Professors Crout and Hornbrook; Assistant Professors Hurst, Oliver, Rosenfeld, and Wanker.

311. *Periodontics 1. S.* 1 hr. Introduction to periodontal diseases, their diagnosis and treatment. Laboratory instruction is included.
340. *Periodontics 2. I.* 1 hr. Intermediate didactic instruction in periodontal therapy including basic surgery and post-operative care.
363. *Periodontics 3. II.* 1 hr. Advanced didactic instruction in periodontal therapy including special surgical procedures.
377. *Periodontics 4. Yr. and S.* 1-4 hr. Clinical experience in the diagnosis and treatment of periodontal diseases.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Fixed Prosthodontics**

Professor Emeritus Adams; Professors Bianco (*Chairperson*) and Tucker; Associate Professors Connor and Kwiatkowski; Assistant Professors Bramble, N. Smith, and W. Taylor.

314. *Fixed Prosthodontics 1. S.* 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
336. *Fixed Prosthodontics 2. Yr.* 5 hr. Lectures and laboratory exercises on principles and technics of crown and bridge prosthodontics. Types of dental bridges, their indications, and contraindications.
357. *Fixed Prosthodontics 3. Yr.* 2 hr. PR: Consent. Lectures concerned with clinical practice; diagnosis, treatment planning, treatment procedures, ceramics, esthetics, and occlusion.
389. *Fixed Prosthodontics 4. Yr. and S.* 1-6 hr. PR: Consent. Clinical application of the theory and practice of crown and bridge dentistry.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Maxillofacial Prosthodontics**

Professor Bianco (*Chairperson*); Associate Professor Kluth; Assistant Professor Lee.

397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

### **Removable Prosthodontics**

Professors Bianco (*Chairperson*) and DeCounter; Associate Professor Van Riper; Assistant Professors Harper, Roth, and Stewart; Instructors Beaumont, Camele, and Sauter.

313. *Removable Prosthodontics 1. I.* 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.
316. *Removable Prosthodontics 2. S.* 1 hr. Lectures and laboratory practice in maxillomandibular relationships and occlusion.
334. *Removable Prosthodontics 3. Yr.* 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.
341. *Removable Prosthodontics 4. S.* 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.



350. *Removable Prosthodontics* 5. Yr. 2 hr. Lectures concerned with clinical practice of complete and partial removable prostheses.
376. *Removable Prosthodontics* 6. Yr. and S. 2-6 hr. Continued application of the theory and practice of removable prosthodontics.
397. *Special Topics. (Fourth Year.)* I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Advanced Education Programs**

The School of Dentistry offers advanced education programs. The Department of Endodontics and the Department of Orthodontics offer programs of advanced study leading to the degrees of Master of Science (M.S.). Programs leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Pharmacology and Toxicology, and Physiology. (See pages 35-50 of this *Catalog*, or the *WVU Graduate Catalog*.) The Department of Oral Surgery offers one oral surgery internship and two residencies. Seven general practice residencies also are offered by the School of Dentistry. Continuing education courses are offered throughout the year. Detailed information concerning admission requirements, courses of study, etc., in these programs may be obtained from the Office of the Associate Dean for Advanced Education Programs.

## **Endodontic Program**

### **Master of Science (M.S.)**

The School of Dentistry and its Department of Endodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.) The program requires a minimum of 24 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in endodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after January 15.

### **Requirements for Admission to the Endodontic Program**

1. Graduation from an accredited school of dentistry.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the Department of Endodontics all information requested in the departmental application form.

### **Requirements for Degree of Master of Science**

1. Fulfillment of general WVU graduate study requirements.
2. Twenty-four months (two academic years and two summer sessions) of consecutive residency at the WVU School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to endodontics.
4. Must satisfactorily pass a final oral examination.

5. Must complete a minimum of 57 credit hours. These include 32 hours of endodontic courses, a minimum of 18 hours of selected basic sciences subjects, and a thesis (7 hours).

6. Must have demonstrated satisfactory clinical competency in the student's field.

7. Must have maintained a grade level commensurate with graduate education.

### **Dentistry (Dent.)**

400. *Advanced Oral Surgery*. I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations, and clinical applications.

### **Endodontics (Dent.)**

390. *Clinical Endodontics*. I, II, S. 1-5 hr. PR: Graduate of an accredited dental school and admission to the Advanced Education Program in Endodontics or consent. (May be repeated for credit.) Clinical endodontic practice in the areas of: ordinary endodontic cases, complex endodontic cases, hemisection, root amputation, replantation, transplantation, endodontic implantation, vital pulp therapy, apexification, and bleaching.

391. *Endodontic Theory*. I, II, S. 2 hr. PR: Consent. Provides seminar discussions in the topics of: basic endodontic techniques, advanced endodontic techniques, endodontic literature review, case presentation, and advanced endodontic theory.

490. *Endodontic Teaching*. S. 2 hr. PR: Consent. Selected teaching experiences including lecture, clinical, and laboratory teaching of undergraduate endodontic courses.

497. *Endodontic Research*. I, II, S. 2-3 hr. PR: Consent. Students will prepare a research protocol, conduct experimental research, and prepare a thesis of original endodontic research.

### **Microbiology (M. Bio.)**

317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available. Pathogenic microorganisms, including immunology and antimicrobial agents.

### **Pathology (Path.)**

382. *Oral Histopathology*. (For graduate and dental students.) I, II. 1-2 hr. PR: Consent. Advanced study of the microscopic aspects of oral and paraoral disease through weekly seminars with emphasis placed on diagnosis.

401. *Special Studies in Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

### **Pharmacology and Toxicology (Pcol.)**

360. *Pharmacology*. I. 4 hr. PR: Consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.

### **Statistics (Stat.)**

311. *Statistical Methods 1*. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (Equiv. to Ed. P. 311 and Psych. 311.)

# Orthodontic Program

## Master of Science (M.S.)

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science (M.S.) The program requires a minimum of 24 months (two academic years and two summers) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Those applicants approved for admission to the program will be notified soon after January 15.

## Requirements for Admission to the Orthodontic Program

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade-point average of 2.75 is required for admission.
3. Each applicant must file with the department all information requested in the department application form.

## Requirements for Degree of Master of Science

1. Fulfillment of general WVU graduate study requirements.
2. Twenty-four months (two academic years and two summers) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 50 credit hours. These include 35 hours of orthodontic courses, a minimum of 9 hours of selected basic sciences subjects, a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

## Anatomy (Anat.)

315. *Craniofacial Osteology and Myology*. I. 3 hr. PR: Dental, medical, or graduate student standing or consent. Study of craniofacial embryology, morphology, and physiology, with special emphasis on articulations and their clinical applications.
316. *Craniofacial Growth and Maturation*. II. 3 hr. PR: Anat. 315 or consent. The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

## Orthodontics (Dent.)

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.



419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
420. *Cephalometrics*. S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
423. *Growth and Development*. II. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
497. *Research*. I, II, S. 1-15 hr.

### **Pathology (Path.)**

401. *Advanced Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar or independent study of local and/or systemic disease processes affecting oral and facial structures.

### **Statistics (Stat.)**

311. *Statistical Methods 1*. I, II. 3 hr. PR: Math. 3. Statistical models, distributions, probability, random variables, tests of hypotheses, confidence intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance and multiple comparisons. (*Equiv. to Ed. P. 311 and Psych. 311.*)

## **Dental Hygiene Program**

The Dental Hygiene Program is a department of the School of Dentistry. The four-year dental hygiene curriculum combines the advantages of both a liberal arts and a professional education. This curriculum format has departed from the conventional, but there is a definite conviction that the inclusion of many disciplines provides greater strength to the program. The educational objectives of the Dental Hygiene Program are:

To prepare individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers of those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States. Presently, these services include: observation, recording, prevention, treatment, education, and communication.

To prepare individuals capable of performing the clinical skills delegated to any dental auxiliary (excluding the dental laboratory technician).

To prepare dental hygienists to teach clinical skills and to present didactic information in dental auxiliary education programs.

To prepare individuals capable of performing coordinative and administrative functions in public health and community related areas.

To prepare individuals for the dental hygiene profession who have a keen sense of social awareness and professional responsibility.

To prepare dental hygienists to continue their professional development past graduation through formal training, self-study, and independent thought.

To prepare individuals who have the capability to understand and adapt to new developments and changes in the scientific, sociologic, and practical factors pertaining to health.

To provide the educational foundation for higher education.

Upon completion of all requirements and with the recommendation of the School of Dentistry, the candidate is awarded the degree of Bachelor of Science in Dental Hygiene (B.S.)

The Dental Hygiene curriculum is structured in accordance with the standards specified for a Dental Hygiene Program by the Commission on Accreditation of the American Dental Association. The program has been fully accredited by this organization since 1965.

## **Admission**

Students enter dental hygiene as freshmen, and the general admission policies of West Virginia University are followed. The applicant must be a graduate of an accredited high school or preparatory school and have completed 1 unit of plane geometry, biology, and chemistry, 2 units of algebra, and 4 units of English. Good grades are expected, and applicants should rank in the upper one-third of their graduating class. Particular attention is given to academic achievement in science courses.

The American College Testing Program (ACT) examination is required of high school applicants. A high school counselor can supply information concerning this examination. The Dental Hygiene Aptitude Test is required of every applicant. A brochure with detailed information and instructions about this test is mailed with application materials or may be obtained by writing the American Dental Hygienists' Association, Suite 1136, 666 North Lakeshore Drive, Chicago, IL 60611.

In addition to a special application form for dental hygiene, each candidate for admission is supplied with three standardized reference forms. Each applicant is requested to have one dental hygienist and two other individuals return the forms directly to the Department of Dental Hygiene.

The personal qualifications, scholastic record, test scores, and recommendation of each applicant are reviewed by the Dental Hygiene Admissions Committee. After reviewing these credentials, the committee will request an interview with those applicants who are most qualified. The applicant will be notified by letter of the date, time, and place of the interview.

The competition for entrance into dental hygiene is extremely keen. *Nonresidents should recognize that preference is given to West Virginia residents. Only those nonresidents with the highest qualifications will be considered.*

For application materials the applicant should write to the Department of Dental Hygiene, West Virginia University, or the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. Applicants should apply and complete aptitude tests as early as possible in the year preceding the year admission is desired. Applications are available in September and are not accepted after March 1.

## **Promotion**

At the end of each semester, the status of each dental hygiene student is reviewed by the Dental Hygiene Committee on Academic Standards. This

committee then makes recommendations to the Dean. Final disposition in each case is the prerogative of the Dean and the Chairperson of Dental Hygiene.

Unconditional promotion normally depends upon fulfillment of all course requirements and the attainment of both a minimum cumulative grade-point average and a minimum science-dental hygiene grade-point average. These minimum grade-point averages are: a 1.50 for promotion to the second year; a 1.75 for promotion to the third year; a 2.0 for promotion to the fourth year; and a 2.0 for graduation.

The courses (or equivalents) utilized to calculate the science-dental hygiene grade-point average are: Anatomy 101; Biology 2; Chemistry 11, 12; Dentistry 300; Microbiology 26; Pathology 128, 129; Pharmacology and Toxicology 160; Physiology 141; and *all* courses in Dental Hygiene (Dnt. Hy. 1-220).

Students who do not qualify to be promoted unconditionally may be placed on probation or may be suspended from further studies in the Department of Dental Hygiene. Probationary status implies that the student will be allowed to make up deficiencies or be given an opportunity to repeat a year.

If a student is promoted on probation, the student must reach the required minimum standards specified above. Students on probation who do not obtain these standards will be reevaluated by the committee.

The Department of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Professional Organizations

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of student membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

*American Association of Dental Schools.* This association of dental educational institutions and faculties has as its primary purpose to promote and improve dental education. Dental hygiene students may join as student members.

*West Virginia University School of Dentistry Alumni Association.* Graduates of the Department of Dental Hygiene may join and participate in all activities of the Alumni Association.

## Courses of Instruction in Dental Hygiene

Associate Professors Komives (*Chairwoman*), Crystal, Graves, Kaplan, and Sherrill; Assistant Professors DeBiase, Krouse, and Morgan; Instructor Monti; Adjunct Professor Ramsey; School of Dentistry faculty.

(Courses included in the Dental Hygiene curriculum, but not listed here, will be found either under other department listings in this *Catalog* or the *WVU Undergraduate Catalog*.)



## DENTAL HYGIENE CURRICULUM PLAN

First Year				Second Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Engl. 1	3	G.P.E. 2	1	Anat. 101	4	Physi. 141	4
G.P.E. 1	1	Chem. 12	4	Path. 128	2	Path. 129	3
Core A		Dnt. Hy. 2	3	Dnt. Hy. 105	2	Pcol. 160	3
(Spch. 11 & 12)	3	Dnt. Hy. 85	3	Nutrn. 71	3	Dnt. Hy. 120	1
Biol. 2	4	Dnt. Hy. 90	3	Ed. P. 105	3	Dnt. Hy. 125	4
Chem. 11	4	Core B		M. Bio. 26	4	Engl. 2	3
Dnt. Hy. 1	2	(Soc.&A. 1)	3				
Dnt. Hy. 66	1						
	<u>18</u>		<u>18</u>		<u>18</u>		<u>18</u>

Third Year				Fourth Year			
First Sem.	Hr.	Second Sem.	Hr.	First Sem.	Hr.	Second Sem.	Hr.
Dnt. Hy. 168	1	Dnt. Hy. 169	1	Dnt. Hy. 202	2	Dnt. Hy. 206	2-4
Core A (Elective)	3	Dnt. Hy. 174	2	Dnt. Hy. 205	6	Electives	
Core B (Psych. 1)	3	Core B	3	Core B		Maximum	15
Dnt. Hy. 152	2	(Psych. 141 or 164)		(Upper Division		Minimum	12
Anes. 300	1	Core A (Electives)	6	Soc.&A.)	3		
Dnt. Hy. 172	2	Dnt. Hy. 150	2	Electives			
Dnt. Hy. 155*		Dnt. Hy. 155*		Maximum	7		
Dnt. Hy. 154*		Dnt. Hy. 154*		Minimum	4		
					<u>15-18</u>		<u>14-18</u>

\*Year courses: Dnt. Hy. 155—6 credit hours: Dnt. Hy. 154—4 credit hours.

### Dental Hygiene (Dnt. Hy.)

1. *Orientation to Dental Hygiene.* I. 2 hr. PR: Enrollment in dental hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
2. *Introduction to the Dental Specialties.* II. 3 hr. PR: Dnt. Hy. 1 or consent. Survey of functions and responsibilities of each of the dental specialties. Emphasis on the role of the dental assistant and dental hygienist in each type of practice.
66. *Technical Expression and Dental Literature.* I. 1 hr. PR: Enrollment in dental hygiene. Preparation and uses of professional communication.
85. *Oral Anatomy.* II. 3 hr. PR: Enrollment in dental hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.
90. *Oral Histology.* II. 3 hr. PR: Enrollment in dental hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention.* I. 2 hr. PR: Enrollment in dental hygiene. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics.* II. 1 hr. PR: Enrollment in dental hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics.* II. 4 hr. PR: Enrollment in dental hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education.* II. 2 hr. PR: Enrollment in dental hygiene. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching dental health to various population groups.

152. *Dental Radiology*. I. 2 hr. PR: Enrollment in dental hygiene. Basic principles and procedures in oral radiology technics and interpretation.
154. *Clinical Dental Hygiene*. I, II. 4 hr. PR: Dnt. Hy. 125. Lectures and clinical application of dental hygiene principles and technics.
155. *Expanded Functions*. I, II. 6 hr. PR: Enrollment in dental hygiene. Lecture, laboratory, and clinical course covering the materials and technics of restorative dentistry and expanded duties for the dental hygienist.
168. *Periodontics*. I. 1 hr. PR: Enrollment in dental hygiene. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics*. II. 1 hr. PR: Dnt. Hy. 168. A sequential course to Dnt. Hy. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health*. I. 2 hr. PR: Enrollment in dental hygiene. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. PR: Enrollment in dental hygiene. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in dental hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
205. *Advanced Clinical Dental Hygiene*. I. 5-6 hr. PR: Senior enrollment in dental hygiene. Role of the dental hygienist in an orthodontic practice, pre- and post-operative care of surgical patients, and introduction to research. Students gain clinical experience in both traditional and expanded duties of the dental hygienist.
206. *Advanced Clinical Dental Hygiene*. II. 2-4 hr. PR: Senior enrollment in dental hygiene. Continuation of clinical practice experience in dental hygiene procedures.
220. *Special Topics in Dental Hygiene*. I, II. 1-22 hr. PR: Senior enrollment in dental hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

## School of Medicine

The School of Medicine began as the College of Medicine in 1902. For ten years this program was affiliated with the College of Physicians and Surgeons of Baltimore, Md. In 1912 the School of Medicine had its formal beginning as an independent school offering the first two years of the medical curriculum. The School of Medicine moved from the Downtown Campus to the Medical Center in 1957 and inaugurated a four-year program in 1960. This coincided with the opening of University Hospital. In 1961, the first M.D. degrees were awarded to 15 students.

In 1945 the School of Medicine established a curriculum in Medical Technology leading to a degree of bachelor of science. The first graduates were awarded a combined degree by the College of Arts and Sciences and the School of Medicine in 1947. The Program of Medical Technology was established in the School of Medicine in 1961. The division of Physical Therapy was established and accepted its first class of 16 students in 1970. The division offers the final two years of a baccalaureate program leading to a degree in physical therapy.

West Virginia University Medical Center—Charleston Division was established in October, 1972, with the affiliation of WVU and the Charleston

Area Medical Center. The Charleston Division offers programs for third and fourth-year medical students in a variety of required and elective courses.

West Virginia University School of Medicine—Wheeling Division was established in 1974. This program is available for many elective opportunities for students in the fourth year.

## **Committees (Chairpersons)**

*Academic Standards:* Gunter N. Franz.

*Biomedical Research Support:* Duane E. Haines.

*Dean's Committee to Clarksburg VA Hospital:* Richard A. DeVaul.

*Curriculum Committee:* James L. Culberson.

*Executive Faculty:* Richard A. DeVaul.

*Educational Advisory:* Richard A. DeVaul.

*Faculty Promotion:* Michael G. Mawhinney.

*Medical School-Hospital Liaison to Student Body:* Richard A. DeVaul.

*Student Admissions:* John F. Foss.

*E. J. Van Liere Student Research Convocation:* Wilbert E. Gladfelter.

*Outstanding Teachers:* Howard D. Colby.

*Continuing Medical Education:* Robert L. Smith.

*Intern Advisory:* David Z. Morgan.

*Admissions Committee for Medical Technology:* Ann W. Sharpe.

*Admissions Committee for Physical Therapy:* Carolyn E. Barnes.

## **Degree**

The degree of Doctor of Medicine (M.D.) is granted to students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## **Combined M.D.-Ph.D. Program**

This should be considered only by students who have shown exceptional interest and promise. All of the admission requirements of the School of Medicine and the Graduate School will apply. Specific course requirements and procedures for monitoring progress will be detailed by both schools.

## **Admissions**

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants who have ties to the state of West Virginia will also be considered. Careful consideration is given to those personal qualifications which bear upon fitness of the applicants for the study and practice of the profession.

## **When to Apply for Admission**

Application for admission in August, 1984, should be made beginning June 1, upon completion of the 1982-83 school year. The latest date for filing an application is November 30, 1983. It is desirable for applicants to file early and to make certain that New Medical College Admission Test scores, current transcripts, and letters of recommendation are available to the Committee on Admissions.



## College Credit Required

The applicant should present a broad general education including a major in some field, not necessarily a natural science. The Admissions Committee needs evidence of excellence of academic performance and steady progress toward a goal.

An excess of credit hours or higher degrees does little to offset the disadvantages of low grades in securing admission to the School of Medicine. The practice of repeating courses to raise the grade is discouraged. Applicants who have been subject to suspension from the West Virginia University or other medical schools can be admitted only in very exceptional cases and at the discretion of the Committee on Admissions.

English .....	1 year
Biological Sciences (with laboratory) .....	1 year
Inorganic Chemistry (with laboratory) .....	1 year
Organic Chemistry (with laboratory) .....	1 year
Physics (with laboratory) .....	1 year
Social or Behavioral Sciences .....	1 year

A total of 90 semester hours of work, exclusive of Military Science (ROTC) and General Physical Education, is required.

It is recognized that applicants for medical school may have very diverse undergraduate backgrounds with a variety of majors. While many undergraduate courses, aside from the required prerequisites, might be beneficial in providing additional background for medical school, the choice of such courses should be determined by the academic strengths and weaknesses of the particular applicant.

## New Medical College Admission Test

The scores of the New Medical College Admission Test (New MCAT) are used by the Admissions Committee in considering an applicant for admission. For this reason, it is strongly recommended that students take the test in the Spring before making application for admission. Delaying the test until Fall, even though all science courses may not have been completed, jeopardizes an applicant's opportunity since no final consideration is given until New MCAT scores are obtained by the Admissions Committee. No applicant can be considered who delays taking the New MCAT until Spring of the year of expected entry. Information concerning the time and place of the test can be obtained from your premedical adviser or committee. The New Medical College Admission Test is required of all applicants and it must have been taken within the past two years before applying.

## Personal Interview

No applicant is admitted without an interview by the Committee on Admissions. Currently, all residents of West Virginia are granted an interview. Qualified nonresident applicants are interviewed at the discretion of the Committee on Admissions. The applicant is notified of the time and place of the interview. Interviews and consideration of applicants begin in September.

## **Conditions Following Acceptance**

The accepted applicant is expected to meet all entrance requirements and satisfactorily complete all undergraduate work in progress. A satisfactory performance in the completion of such work is defined as one which is consistent with the student's previous academic record. Failure to do so may result in the withdrawal of the acceptance by the Committee on Admissions.

It should also be apparent that furnishing or causing to be furnished false information for the purpose of the School of Medicine application constitutes grounds for disciplinary action, including but not limited to expulsion or revocation of the acceptance.

## **Admission to Advanced Standing**

Increasing numbers of inquiries are being received seeking consideration of enrollment in the WVU School of Medicine with advanced standing. Only a limited number of such requests can be processed. Transfer ordinarily will be considered only at the end of the second year. The applicant must have presented results of the Medical Science Knowledge Profile (MSKP) Test and must present certification of good standing in the school from which the student is transferring.

## **Examinations and Evaluation of Student Progress**

It is the policy of the School of Medicine that the several departments conduct examinations of various types from time to time to help in the overall evaluation of student progress. A Satisfactory (S) or Unsatisfactory (U) designation is formally recorded for each course. In addition, each department files in the Office of the Dean a narrative evaluation of the work of each student identifying strengths and weaknesses and suggesting remedial or corrective measures, if appropriate.

In addition to departmental examinations, which help serve as a basis for recording grades in individual courses, other examinations may be conducted at times for other purposes. At the end of the first year a comprehensive examination, designed on an interdepartmental basis, may be required as a test of readiness for promotion. National Board of Medical Examiners, Part I, examinations are given as part of the testing of achievement in individual disciplines and are incorporated in the final grade for that course. The student is encouraged to take the complete Part I examination as a candidate for National Board certification near the end of the second year. The Part II examination is required as a comprehensive test in clinical science at the end of the third year and results are incorporated in the final grades for clinical clerkships.

The overall performance of the student on the National Boards will be taken into account by the Committee on Academic Standards when considering decisions regarding promotion, and by the faculty when making the official recommendation for granting degrees.

All states require that physicians be licensed to practice medicine. Satisfactory completion of all portions of the National Board of Medical Examiners examination is one mechanism by which a license may be obtained.

## Promotions and Progress

The Committee on Academic Standards administers the promotions and dismissal rules. Exceptions may be made only on recommendation of the committee. The application of rules on dismissal is not automatically changed by removal of Incomplete (I) grades or by the repetition of courses in other medical schools.

1. The Committee on Academic Standards of the School of Medicine reviews the performance of each student in every course at the end of each academic period and makes recommendations to the Dean. If a student has been found to have an unsatisfactory performance in any of the required courses, dismissal from the school may be recommended. In selected circumstances, the committee may recommend remedial work or repetition of all or a portion of the curriculum.

Rarely, a student may be subject to remedial work or dismissal on recommendation of the Committee on Academic Standards to the Dean even though no Unsatisfactory (U) grade has been received in a required course. Such an unusual event would occur only if, in the opinion of the committee, the student's overall performance does not meet the academic standards of the School of Medicine.

2. No student will be permitted to register for any work of the second or subsequent year until all courses for the year before have been completed successfully.

3. All courses and all classes at the School of Medicine are graded as Satisfactory (S) or Unsatisfactory (U) at the completion of the course in lieu of other letter grades. The S and U designation is accompanied by a narrative report of the student's progress and any factors requiring remedial work or counseling. The U shall be regarded as a failing grade and all University regulations regarding a failed course shall then apply.

4. Readmission of a dismissed student is the prerogative of the Committee on Admissions after careful review of the student's performance, including but not limited to, recommendations of the Committee on Academic Standards.

5. All nondisciplinary matters are governed by the concept of academic due process.

6. Upon concurrent recommendation of the Committee on Admissions, the Committee on Academic Standards, and the departments concerned, a limited number of students may be admitted to the School of Medicine to follow a special schedule reflecting the student's individual needs to complete requirements for the M.D. degree.

*In view of public and professional responsibilities, the faculty of each of the professional schools of WVU has the authority to recommend to the President of the University the removal of any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.*

## Incomplete Courses

The grade of Incomplete (I) is given when the instructor believes the work is unavoidably incomplete or that a supplementary examination is justifiable. If a grade of I is not removed by satisfactory completion of the work before the end of the next semester in which the student is in residence, it becomes a failure unless special permission to postpone the work is obtained from the



Committee on Academic Standards (University rule.) It is the responsibility of the student to consult the instructor about the means and schedule for making up incomplete courses.

## **Departure From Scheduled Work**

Medical students must register for all prescribed courses for each semester except by special permission from the Committee on Academic Standards of the School of Medicine. This permission is not valid until it has been reported to the Assistant to the Dean of Admissions and Records, Medical Center, for record.

## **Departure**

Interruption of academic work must be approved by the Committee on Academic Standards in its recommendation to the Dean except in urgent circumstances, such as for illness.

## **Honor Code**

Students in the School of Medicine agree to abide by the provision of an honor code which requires ethical and moral standards of conduct in all situations.

## **Immunizations**

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

## **University Hospital and Outpatient Clinics**

University Hospital and its outpatient clinics are dedicated to the education of students in the multiple disciplines of the health fields and to the advancement of knowledge in the sciences and arts concerned with health and illness.

Specialist services at University Hospital are provided through the staff of the clinical departments of the School of Medicine.

There are also facilities and staff for clinical laboratory service, diagnostic and therapeutic X-ray services, and such special examinations as electrocardiography, cardiac catheterization, and electroencephalography. Emergency facilities are available at all times.

## **Organizations**

Graduates of the School of Medicine have a *School of Medicine Alumni Association* devoted to the interests of students and graduates and to the encouragement of scientific and professional progress among its members and the medical profession generally.

*Student American Medical Association.* This organization has a chapter among the students of this school. An Auxiliary provides opportunities for student wives to meet and work together.

*Student National Medical Association.* This organization has among its objectives assistance in the recruitment and retention of minority students.

## Lectureships

*Alumni Lectureship.* Annually some outstanding physician is brought to the WVU Medical Center under School of Medicine Alumni Association sponsorship to address the student body.

*Gideon Stanhope Dodds Lectureship.* A periodic lectureship, founded by a group of alumni and friends, honors Dr. Dodds, late professor emeritus of histology and embryology.

## Curriculum Plan

### First and Second Years

The plan of study is directed toward the principles and methodology of the medical basic sciences. However, the basic courses are designed so that the student begins to integrate concepts of patient care.

The student has the opportunity of an additional early exposure to patient-oriented instruction through the introduction to physical diagnosis and community medicine in the first term of the freshman year.

With the recognition that entering medical students have a wide variety of interests and backgrounds, elective opportunities are offered in the basic science years, beginning with the second term of the freshman year. The permissible elective courses or plans of study have broad limits and need not be confined to the Medical Center. The intention is to encourage responsible student initiative.

See Medicine I and Medicine II charts for representative schedules.

### Third Year

A tightly-structured traditional third year gives the student a foundation in history-taking, examination, patient relations, laboratory aids, diagnosis, treatment, and use of the medical literature in the major clinical disciplines.

A number of third-year students will spend part or all of the year in specified clerkships at the Charleston Division of the WVU Medical Center or other affiliated programs as designated by the faculty of the School of Medicine.

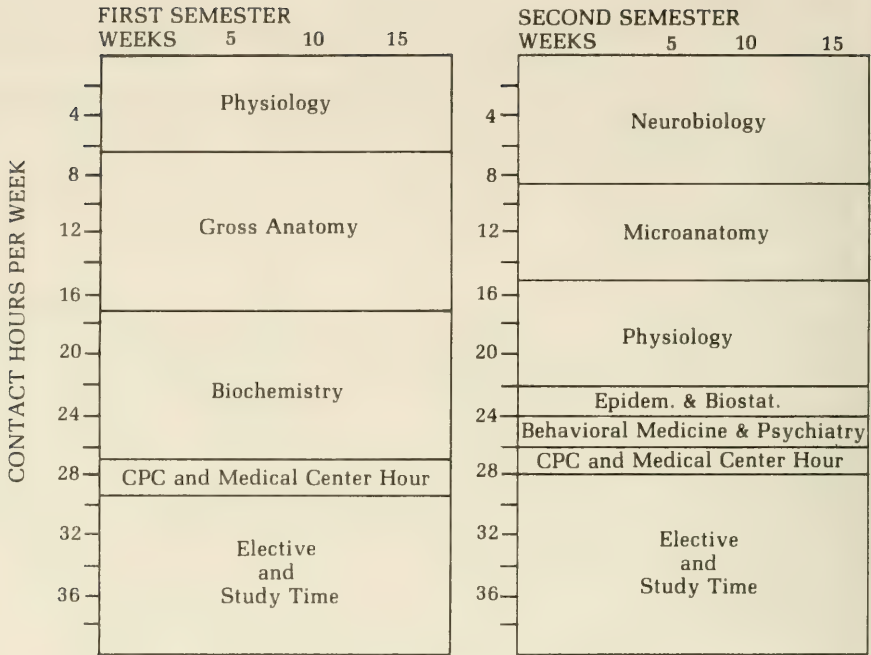
Ordinarily, third-year students should take Part II of the NBME in September of their fourth year. Under special circumstances, third-year students may take Part II of the NBME in April of their third year even though they will not have completed all of their clinical clerkships.

### Fourth Year

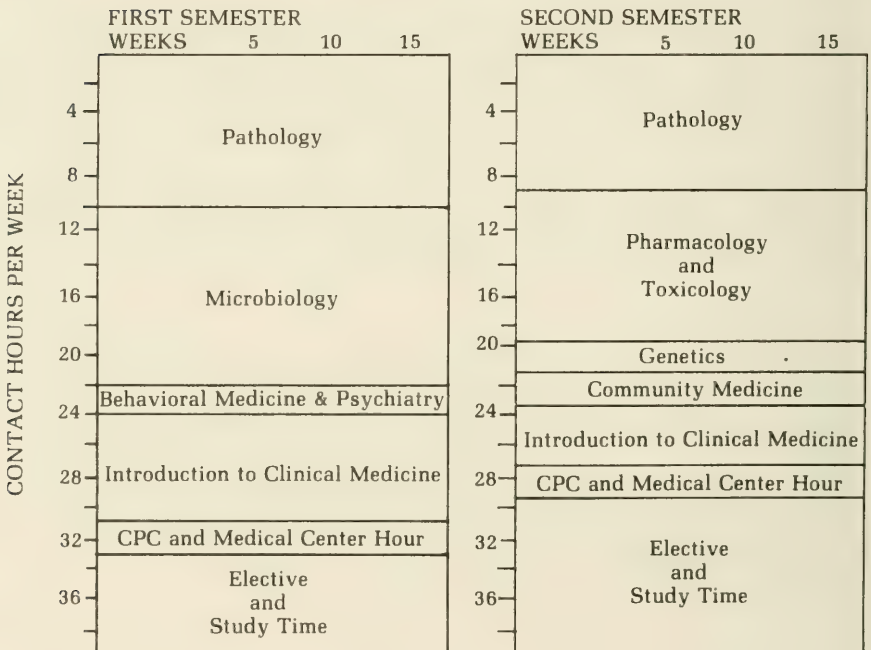
The fourth year is selective. The student chooses one of three "tracks" and works with advisers at each track to select the individual program. The general track is appropriate for: (1) the student pointing toward family practice, and (2) the student who has not selected a particular speciality interest.

The student chooses a specialty track by department, and may already recognize an attraction to a sub-specialty within that department. The research track offers opportunity to spend much of the fourth year in medical or biological research.

## MEDICINE I



## MEDICINE II





## MEDICINE III

### Clerkships

#### WEEKS

12	Medicine
12	Surgery
12	Behavioral Medicine and Psychiatry
	Obstetrics and Gynecology
12	Pediatrics
	Neurology, Pediatrics OPD, Acute Medicine
48	TOTAL

Sixteen of the 44 weeks must be spent in intramural programs. In addition to programs on the Morgantown campus, the programs at the Charleston Division—WVU Medical Center, qualify as intramural. A similar designation for specific programs is in development at the Wheeling Division—WVU School of Medicine and the Veterans Administration Hospital in Clarksburg. A folder is available that lists the approved intramural selective options.

A number of assigned fourth-year students will take all of their clerkships at the Charleston Division of the WVU Medical Center.

The Joint Council of Teaching Hospitals, working with physicians in various communities and the School of Medicine, has developed extramural selective opportunities at a number of hospitals in West Virginia. Alternatively, the selectives may be spent at a university or university-affiliated hospital.

Every student has the opportunity for 4 weeks of vacation. The student may choose valuable medical experience for vacation time.

A separate booklet lists the extramural in-State electives and provides specific guidelines for the fourth-year curriculum.

## Courses of Instruction

### Anesthesiology (Anes.)

Professors Eller, Heironimus, Kennedy, Smith, Knapp (*Chairperson*), and Rodman; Associate Professors Bettinger, Dedhia, Doshi, Martinez, Sklar, and Zimmerman; Assistant Professors Graf, Patrick, Schiebel, Teba, and Warren; Clinical Professors Cwik, Weeks, and Zeedick; Clinical Associate Professors Hall, Koliner, Lilly, and Tercan; Clinical Assistant Professors Bellotte, Bergman, Carter, Gannon, Hovis, Huber, Jawalaker, Kessell, Larkin, Mathew, Rajaratnam, Scheinholtz, and Westmoreland; Clinical Instructors Chevuru, Saldanha, Thompson, and Walker.

301. *Basic Sciences Applied to Anesthesia—Medicine I and II.* 1-6 hr. per year. PR: Consent. (Not offered during summer.) Examination and evaluation of data, decision-making, discussion of special procedures. (Max. enrollment: 10.)

**MEDICINE IV**  
Three Alternative Tracks

WEEKS	GENERAL	SPECIALTY	RESEARCH
4	Vacation	Vacation	Vacation
12	Special Selective Advisory Group Concurrence	Special Selective Department Chairperson Concurrence	Special Selective Advisory Group Concurrence
8	Clinical Neuro Sciences, Behavioral Medicine and Psychiatry, Radiology Ob Gyn or Pathology Including Clinical Pathology	Department Chairperson Approval	Advisory Group Approval
8	Medicine and or Pediatrics, Including Sub Specialty Units		
8	Surgery, Including Sub Specialty Units		
4	Acute and Ambulatory Care		
44	TOTAL		

331. *Clinical Clerkship in Anesthesiology/Acute Medicine. (Third Year.)* CR.
- A. *Lectures to Third-Year Students on Topics Related to Anesthesiology.*
- B. *Clinical Clerkship in Acute Medicine.* Clinical clerks will receive instruction in preanesthetic evaluation, local and systemic anesthesia, airway management, cardiopulmonary resuscitation, respiratory care, clinical pharmacology and toxicology, fluid and blood therapy, and pain management. Methods of instruction include seminars and practical exercises in emergency cardiac life support and clinical experience in the intensive care unit and the operating theatre. (Duration: 2 weeks.)
- C. *Pain Clinic.* Objective: To evaluate and treat patients with intractable pain from various disease states, i.e., cancer, trauma, peripheral neuropathies, musculoskeletal disorders, etc. Methods to achieve objective: guided, direct participation through a multidisciplinary approach using modalities of nerve blocks, physical therapy, sensory modulation, behavioral therapies, and neuropharmacology. Regular faculty participation from the Departments of Anesthesiology and Behavioral Medicine and Psychiatry. Duration: 2-8 weeks. Offered: Continuously. (Max. enrollment: 2.)
399. *Selective Experiences in Anesthesiology. (Fourth Year.)* CR. (See Conjoined Courses.)
- A. *Clinical Anesthesiology.* Participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)
- B. *Intensive and Respiratory Care.* Direct participation in all aspects of intensive and respiratory care. Laboratory methodology. Measurement of ventilatory and circulatory parameters. Ventilator use and management. Offered continuously. Duration: 4 weeks. (Max. enrollment: 2.)
497. *Anesthesiology Research.* 1-15 hr. Participation in ongoing clinical laboratory projects including: The effects of benzodiazepine derivatives as premedicant, induction and amnesic agents for anesthesia; monitoring techniques in the critically ill; pathophysiology of the airway and lung; biochemical and ultra-structural studies of the metabolism of neurotransmitters from central and peripheral nerves; to learn research techniques; newer methods of physiological measurements in critically ill patients. Computer monitoring in intensive care. Duration: 4-24 weeks. Offered: By arrangement. Max. enrollment: 2.

## **Behavioral Medicine and Psychiatry (B.M.)**

Professors Carter, DeVaul, Flink, Hein, Kelley, Morgan, Morgan, Quarrick, Stevenson (Chairperson), Waldman, and Watne; Research Professor Pawlicki; Associate Professors Chelune, Claude, Colvin, Cone, Ellis, Hlusko, Ingersoll, Kommor, Linton, Pepper, Reamy, Seime, and Walker; Assistant Professors Clausell, Desai, Fonte, Ganahl, Kelley, King, Koon, Lerfald, Miller, Nash, Orr, Peoples, Roberts, and Robison; Research Assistant Professors Dahlquist and King; Adjunct Professor Levine; Adjunct Associate Professor Elkins; Adjunct Assistant Professor Hamilton; Adjunct Instructors Harnes, Kent, Renick, and Stone; Clinical Professors Aydt, Bateman, Comer, Marquis, Rossman, Schein, Weise, and Withersty; Clinical Associate Professors Callahan, Edelstein, Edwards, Goodman, Hibbard, Kerns, Knapp, Markham, Nahemow, Panepinto, Scott, Smith, Srebalus, Tinnin, Ward, and Zarski; Clinical Assistant Professors Allen, Almond, Berler, Brailier, Capage, Chambers, Collins, Davis, Donovan, Dunning, Fawley, Fink, Frye, Hill, Hoback, Hutton, Inger, Kovacevich, Ledwell, McCluskey, McNeer, MacCallum, Morgan, Naviaux, Neilan, Panepinto, Pittman, Pollard, Portz, Puzzuoli, Settle, Sine, Smith, Smith, Soule, Stein, Venjohn, Webb, Wheelless, and Williams; Clinical Instructors Fawley, Gantt, Goldberg, Hunter, and Starkey.



311. *Introductory Psychiatry. (First Year.)* 2 hr. An examination of major clinical syndromes and their biological and environmental concomitants. Introduction to patient care with interviewing techniques and limited patient work-ups under supervision.
321. *Introductory Psychiatry. (Second Year.)* 2 hr. Continuation of B.M. 311 with an in-depth look at more basic science and social science parameters in psychiatry. Additional supervised patient work-ups and presentations.
341. *Clinical Clerkship in Psychiatry. (Third Year.)* CR. Required of third-year medical students. Full-time assignment to the inpatient service in psychiatry and participation in diagnosis and treatment of psychiatric disorders. Emergency Room responsibility.
355. *Behavioral Science and Health Care.* Behavioral science applied to issues related to physical and mental health care. Variety of topics will be considered, such as study of interpersonal roles and games, various cultural "healing" practices, personal and social aspects of illness, family disorganization, and hospitals and related institutions.
399. *Selected Experiences in Behavioral Medicine and Psychiatry. (Fourth Year.)* (See Conjoined Courses.)

### Community Medicine (C. Med.)

Professors Pearson (Chairperson), and Mou; Clinical Professor Hansbarger; Associate Professors Bosanac, Hall, and Smith; Clinical Associate Professors Cooley and Wiles; Adjunct Associate Professors Ames, Carlton, Garson, Holland, and Reger; Assistant Professors Garland, Murray, and Wyant; Clinical Assistant Professors Hinton and Mukkamala; Adjunct Assistant Professors Brough, Crews, Goodwin, Graham, Greenwood, Harper, and Patil; Clinical Instructors Atkins, Lee, Patton, and Wagner; Adjunct Instructors Attfield and Thomas.

311. *Methods of Biostatistics. I.* 3 hr. PR: Math. 3. Basic concepts of statistical models, distributions, probability, random variables, test of hypotheses, confidence intervals, regression, correlation, F and  $X^2$  distributions, analysis of variance with emphasis on methods of biostatistics. (Equiv. to Stat. 311.)
312. *Community Medicine. (Second Year.) II.* 2 hr. Open to limited number of graduate students. PR: Consent. The role of the physician in the prevention of disease and in the examination of health status in a community, with reference to demographic, economic, sociologic, environmental, and occupational factors. The organization of public health and medical care.
322. *Epidemiology and Biostatistics. (First Year.) II.* 2 hr. PR: Consent; medical students only. Epidemiological and statistical analysis of biologic phenomenon as related to medicine. Emphasis on descriptive statistics, analytical epidemiology, statistical inference, measures of association, and evaluation of medical literature.

### Conjoined Courses (CC MD)

399. *Selective Experiences in Medicine. (Fourth Year.)* I, II, S. CR. PR: Satisfactory completion of first three years of the medical curriculum. (Graded as S or U.) The selective program offers a wide range of opportunities in the basic sciences, medical specialties, and sub-specialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at the WVU Medical Center in Morgantown and approved programs at the WVU Medical Center—Charleston Division, WVU School of Medicine. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans an individual program, with faculty advice. Flexibility is permitted. With consent of instructors concerned, the student may, during the year, alter the selective choices. The student must give five weeks' notice before changing an intramural or extramural selection. (See the intramural and extramural brochure, published annually, describing the selective opportunities.)

## Family Practice

Professors Traubert (Chairperson), Carper, Pearson, and Vazquez; Associate Professor Weisser; Assistant Professors Arbogast, Cleavenger, Nesselrode, and Palmer; Clinical Professors Davis, Hall, Jackson, Jarrett, Simmons, and Tully; Clinical Associate Professors Brooks, Fullmer, Hess, Kellas, Mangus, Newman, Rashid, and Sinclair; Clinical Assistant Professors Clark, Crigger, Dickey, Eckmann, Graham, Hinton, Hofreuter, Lewis, McNeill, Merrifield, Patton, Reed, Ritz, Roberts, Sine, Stemple, and Warren; Clinical Instructors Bergman, Blum, Casto, Conley, Gais, Goodwin, Harris, Hayes, Hokanson, Jones, Peck, Saver, and Wack; Nurse Clinician Nath; Patient Educator Murray.

399. *Selected Experiences in Family Practice. (Fourth Year.)* (See Conjoined Courses.)

## Medicine (Med.)

Professors Waldman (Chairperson), M. Albrink, E. Flink, A. Jain (Chief, Cardiology), J. Jones (Vice-President—Health Sciences), L. Lapp (Chief, Pulmonary Diseases), E. McIntosh, D. Z. Morgan, E. Morgan, T. Mou (Dean, Charleston Division), R. Ortel, W. Point (Director of Medicine, Charleston Division), P. Raich (Chief, Hematology/Oncology), S. Shane, J. Stevenson (Chief, Behavioral Medicine/Psychiatry), W. Welton (Chief, Dermatology), and Whittier (Chief, Nephrology); Associate Professors Bekheit, Chideckel, Colvin, D'Alessandri (Chief, Comprehensive Medicine), DiBartolomeo (Chief, Rheumatology), R. Gaskins (Chief, Gastroenterology), Georgiev, Grubb, Khakoo (Acting Chief, Infectious Diseases), R. Martin, W. Nelson, Rogers, J. Shultz (Chief of Medicine, Wheeling Division), and I. Ullrich; Assistant Professors Abrons, Al-Kawas, J. Barry, Brestel (Acting Chief, Allergy & Clinical Immunology), H. Dedhia, Finucane, Fontana, Gross, Guy, T. Hogan, Jubelirer, Kleinmann, Lempert, Malamisura, Mayes, Morise, B. Nelson, O'Keefe, Petsonk, Powers, Reimer, P. Robinson, and Tannenbaum; Adjunct Assistant Professors Hodous and Storey; Instructor Blehschmidt; Adjunct Instructors Bauer, Castellan, Hodgson, and Sepulveda; Clinical Professors Emeriti Blatchley, Johnson, Pushkin, and Tuckwiller; Clinical Professors Avington, Brodmerkel, Carter, Gaziano, Gregory, Lewis, R. Marshall, McMillan, Pfister, Reiter, Santer, Saville, Selinger, Skaggs, and S. Warren; Clinical Associate Professors Artz, Basu, Chvasta, Conley, R. Gainer, W. Hall, Houston, Jackson, D. Jones, Koliner, Koppel, Latos, Lynch, McCabe, Nestmann, Palmer, R. Point, Revercomb, Scobbo, Shafi, Valentine, and Zaldivar; Clinical Assistant Professors Altmeyer, Arnett, Avashia, Byrd, Campbell, Cassis, Cornwell, Cunningham, Duncan, Farmer, Gomez, Gustke, Harbaugh, Harper, Horsman, D. Lee, MacCallum, Masilamani, Mazzocco, McConnell, McJunkin, Noble, Pandya, Parsons, Patel, Previll, Rectenwald, Roidad, Schaeffer, Thakker, Vasquez, Warren, and D. Wright; Clinical Instructors Brown, Drews, A. Lee, R. Lewis, Lim, McCagh, Powell, Saunders, and Sawitz.

321. *Physical Diagnosis—Introduction to Medicine. I, II. 5 hr. PR:* Consent. Examination of normal subjects. Clinical concepts and practical experience in history taking and physical examination.

331. *Clinical Clerkship in Medicine. (Third Year.) CR.* Required of third-year medical students. The individual student is assigned responsibility for specific patients from the in-patient service at University Hospital or Charleston Area Medical Center service. The student is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the departments. Clerkship in medicine occupies 12 weeks.

399. *Selected Experiences in Medicine. (Fourth Year.) CR.* (See Conjoined Courses.)

## Neurological Surgery

Professors Nugent (Chairperson) and Dunker.

399. *Selective Experiences in Neurological Surgery (Fourth Year.)* (See Conjoined Courses.)

## Neurology (Neuro.)

Professors Azzaro, Gutmann (Chairperson), Martin, and Schochet; Associate Professors Fakadej; Assistant Professors Breen, Carter, and Riggs; Clinical Professor Poffenbarger; Clinical Associate Professor Crosby; Clinical Assistant Professors Kettler, Loudon, Morgan, Pratt, and Swisher.

341. *Clinical Clerkship in Neurology. (Third Year.)* CR. Required of third-year students. Basic fundamentals of the neurological evaluation and neurological diseases. Evaluation and treatment of hospitalized patients with neurological illnesses performed under supervision of attending and resident physicians. Conferences and correlative instruction in neuropathology and neuroradiology.
399. *Selected Experiences in Neurology. (Fourth Year.)* CR. (See Conjoined Courses.)

## Obstetrics and Gynecology (Obst.)

Professors Butcher, Cox (Chairperson), and Patchell; Professor Emeritus Fugo; Associate Professors Ashraf, Durkin, Foss, Granados, and Reamy; Clinical Professors Behnam, Bonney, Chambers, Giustini, Mairs, and Palladino; Clinical Associate Professors Arceo, Grubb, Maxson, Poole, Stone, Williams, and Withersty; Clinical Assistant Professors Athari, Battaglino, Berry, Clark, Curnutte, Georgiev, Jacobson, Keefer, McKinley, Park, Pearcy, Sandhu, Wanger, and White; Clinical Instructor Fulcher.

341. *Clinical Clerkship in Obstetrics and Gynecology.* (Required of third-year medical students.) Presents core knowledge of obstetrics and gynecology with small group instructional seminars, ward rounds, didactic teaching sessions and grand rounds conducted by faculty, house officers, visiting faculty, and students. Students are involved with care of all patients, participating in an essential role in patient care. Experience extends to outpatient clinics in all aspects of obstetrics and gynecology.
399. *Selected Experiences in Obstetrics and Gynecology. (Fourth Year.)* An elective subinternship in obstetrics and gynecology with major responsibility for patient care beyond that provided during the third-year curriculum. Students participate in outpatient and inpatient care with delegation of responsibility commensurate with level of training and ability. Supervision is provided by house officers and faculty. Greater participation in surgical procedures is provided, as well as active participation in complicated obstetrical patients.

## Ophthalmology (Ophthal.)

Professors Weinstein (Chairperson) and Colasanti; Clinical Professors Ryan and Trotter; Associate Professor Raju; Clinical Associate Professors Blaydes, Hamrick, Magee, O'Conner, Shepherd, and Winkler; Assistant Professors Breen, Raflo, and Schwab; Clinical Assistant Professors Genin, Nugent, Pangilinan, Park, Rashid, Strauch, Strickland, Tarakji, Toma, and Werblin; Clinical Instructors Linger, McClure, and Minardi.



399. *Selected Experiences in Ophthalmology. (Fourth Year.)* (See Conjoined Courses.) Students are presented with the opportunity to acquire clinical skills in ophthalmology including techniques of eye examinations and certain aspects of emergency and elective treatment of eye disorders. There is close supervision by housestaff and members of the full-time ophthalmology faculty. Areas of special faculty interest include glaucoma, corneal diseases, retinal and vitreous diseases, and oculoplastic surgery. There are opportunities for students to participate in basic and clinical research. This experience occupies four weeks and can accommodate a maximum of 2 students and an additional student for a research project.

### **Orthopedic Surgery (Orth. Surg.)**

Professors Lemperg and Radin (*Chairperson*); Professor Emeritus Pickett; Clinical Professors Davis and Wiley; Clinical Associate Professor Bowers; Assistant Professors Blaha and Labosky; Clinical Assistant Professor Stoll.

399. *Selected Experiences in Orthopedic Surgery. (Fourth Year.)* (See Conjoined Courses.)

### **Otolaryngology (Otolaryn.)**

Professors Sprinkle (*Chairperson*), Cody, and Lass; Clinical Professors Hall and Morgan; Clinical Associate Professors Bryant, Cather, Haislip, Hatfield, Jaquiss, Kameron, Lim, Malone, Mathias, Oliverio, Paine, Spencer, and Whitaker; Assistant Professor Anderson; Clinical Assistant Professors Azar, Bland, Dodd, Holt, Nichols, Seung, Snider, Sporck, Tekieli, Wade, Wilkinson, and Wolfe; Clinical Instructors Barr, Curiel, Lanham, and Wallace.

399. *Selected Experiences in Otolaryngology. (Fourth Year.)* (See Conjoined Courses.)

### **Pediatrics (Pedia.)**

Professors B. Jones (*Chairperson*), Kelley, Klingberg, Neal (*Chairperson, Pediatric Cardiology*), Pomerance, and Amato; Associate Professors Fakadej, Mullett, Phillips, Ross, Wuori, Wible, and Myerberg; Assistant Professors Anderson, Howland, and Balian; Instructor Sutherland; Clinical Professors Hansbarger, Harrison, Jakubec, Potterfield, and Stabins; Clinical Associate Professors Ayoubi, Burech, Holyman-Ayoubi, Israel, Lesiae, Lewine, Morris, and Shawkey; Clinical Assistant Professors Carlson, Kumar, Lamrechts, Lawrence, Morgan, Previll, Rhee, Staab, Szego, Verma, and Wolf; Clinical Instructors Grijalva, Iskander, Majumder, Mossahebi, and Uy; Research Instructor Boyd.

331. *Clinical Clerkship in Pediatrics. (Third Year.)* CR. Required of third-year medical students. See description of clinical clerkship under Med. 331. Clerkship in Pediatrics occupies 6 weeks.

370. *Genetics. (Second Year.)* Introduction to the understanding of genetics and heritable diseases in man.

399. *Selected Experiences in Pediatrics. (Fourth Year.)* (See Conjoined Courses.)

### **Radiology (Radiol.)**

Professors Gabriele (*Chairperson*) Frich, and Elyaderani; Associate Professors Goodwin, Lai, Sinha, Slack, and Wald; Assistant Professors Barnett, Chang, Gorbaty, Jain, Kavic, Tehranzadeh, and Willard; Clinical Professors Castro and Kennard; Clinical Associate Professors Antico, Arbitman, Barger, Bishop, Ellswood, Goodwin, Haslem, Hogan, Rogers, Sexton, Szalontay, and Wilder; Clinical Assistant Professors Abdalla, Briley, Cordell, Cossrow, Francke, Gabriel, Gulati, T. Hayes, W. Hayes, Hetzer, Hong, Kalinowski, Kim, King, Ko, Koh, Leef, Marano, Nagarajan, Noble, Patterson, Reddy, Rosenblatt, Smith, Stupar, Wershba, Wheatly, Williams, Wymer, and Yost.



The radiology staff aids in the instruction of students at all levels of the curriculum. They assist in the teaching of topographic anatomy in the first year. The careful interpretation of roentgenograms is an integral part of each clinical service.

101. *Radiology*. Selected experiences in general radiology.
102. *Neuroradiology*. Review of neuroanatomy with respect to application in neuroradiology. Selected experiences in neuroradiology.
103. *Cardiovascular Radiology*. Review of anatomy and embryology. Selected experiences in central and peripheral vascular radiology.
104. *Radiologic Physics*. Application of physics and mathematics to radiology, nuclear medicine, and radiation therapy.
399. *Selected Experiences in Radiology*. (Fourth Year.) CR (See Conjoined Courses.)

## **Surgery (Surg.)**

Professors Watne (Chairperson), Boland, Moran, Tarnay, and Warden; Clinical Professors Bradford (Emeritus), Charbonniez, Easley (Emeritus), Gilmore, Gray, Hershey (Emeritus), James, Linger, McConnell, Mendoza, O'Dell, Trenton, and Walker; Associate Professors Alexander, Durham, Hrabovsky, McDowell, Savrin, and Vargish; Clinical Associate Professors Bock, Chaphery, Glass, Kappel, J. Khan, M. Khan, King, Leadbetter, MacDonald, Rahbar, Schaefer, Shabb, Surmonte, Thorngate, Thrush, Velasquez, and Voss; Assistant Professors Avis, Foshag, Kusminsky, and Veach; Clinical Assistant Professors Aburahma, Al-Hajj, Boustany, Dickey, Fedde, Figueroa, Fogarty, Foster, Griswold, Heiskell, Johnson, Kim, Lee, Mantz, J. Page, Polack, Rashid, Reed, Suson, and Trammell; Instructors Evans, Makos, Manetta, Swanson, Wiseman, and Zekan; Clinical Instructors Page, Patel, and Strauch.

341. *Clinical Clerkship in Surgery*. (Third Year.) CR. Required of third-year medical students. Clinical clerks are assigned responsibility for hospitalized surgical patients under supervision of house staff and attending surgeons. Students are an integral part of the team providing diagnostic and treatment services and are expected to take histories, perform physical examinations, and participate in ward and laboratory procedures. An elective laboratory experience is offered. A course of surgical lectures, designed to outline surgical core curriculum, is given concurrently. The student is expected to attend the daily rounds and conferences arranged by the department.
399. *Selected Experiences in Surgery*. (Fourth Year.) (See Conjoined Courses.)

## **Urology (Urol.)**

Professors Kandzari and Milam (Chairperson); Associate Professor Belis; Clinical Professor Summers; Clinical Associate Professors Lane, McCoy, McCuskey, and Trapp; Clinical Assistant Professors Celis, Durig, Lee, Lindert, Naranjo, Ravitz, Serrato, Shannon, and Stoughton; Clinical Instructors Faddoul, Kassis, and McClellan.

399. *Selective Experiences in Urology*. (Fourth Year.) (See Conjoined Courses.)

# **Medical Technology**

## **Undergraduate Program**

The undergraduate program in medical technology is under the administration of the School of Medicine. Students are admitted into the program leading to a bachelor of science degree after the completion of two years of premedical technology in an accredited college or university. The WVU Medical Technology Program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates are eligible for certification by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and by the National Certification Agency for Medical Laboratory Personnel (NCA).

The undergraduate curriculum includes the premedical technology program, which is offered in the WVU College of Arts and Sciences and at Potomac State College in Keyser and the medical technology program which is offered in the School of Medicine.

Courses of the first two years (premedical technology) may be taken in any institution of recognized standing that offers the courses required for admission into the medical technology program.

Since the course of study of the last two years is of a professional nature, students must be enrolled in the WVU School of Medicine for this entire period. The work of the junior year (the first year in the medical technology program) includes courses which introduce the student to the medical sciences and courses which prepare the student for the work of the senior year. During the senior year (the second year in the medical technology program) the student receives both didactic instruction and practical experience in the University Hospital laboratories.

### **Aim and Purposes**

The primary aim of the program in medical technology at WVU is to provide a strong undergraduate educational program in medical technology which leads to a bachelor of science degree and which provides an educational background compatible with the demands placed upon the medical technologist by the ongoing technologic revolution in laboratory medicine.

The purposes are: (1) to provide a program in medical technology which meets the academic standards of the University; (2) to provide graduate medical technologists for clinical, public health, and research laboratories; (3) to provide an educational background which enables graduates to prepare for teaching and supervisory positions in medical technology; and (4) to provide an educational background acceptable for graduate work in the medical sciences.

A program for certified medical technologists, who desire to complete requirements for a Bachelor of Science degree is available. (Further information may be obtained by contacting the Medical Technology Programs Office.)

### **Admission**

Application for admission into the junior year (first year in the undergraduate medical technology program) should be made before the beginning of the second semester of the sophomore year in college. *Students at*

WVU or Potomac State College are not transferred automatically from the preprofessional course (first two years) to the professional course (third and fourth years.) Students are selectively admitted to the program for their final two years of work.

Application forms for admission to the professional course are available after December 1 from the office of the Assistant to the Dean of Admissions and Records, Medical Center. These forms should be completed and returned to that office no later than February 1, if the student expects to enter the succeeding first semester classes.

Admission to the third year is on the recommendation of the Admissions Committee to the Dean. A personal interview with the Committee is required.

### **Admission Requirements**

Complete information concerning WVU admission, fees and costs, registration, regulations, etc., may be found in the WVU *Undergraduate Catalog*, College of Arts and Sciences section.

(a) Admission requirements for the first year (premedical technology) are those for the College of Arts and Sciences.

(b) Admission to the third year (first year of the medical technology program) is based upon two years of college work with a total of 62 hours as follows:

English. 6 hours. (Composition and rhetoric.)

Biological Science. 8 hours. (General biology or general zoology.)

Chemistry. 15-16 hours. (Inorganic chemistry, 8 hours; quantitative analysis, 3-4 hours; organic chemistry, 4 hours.) (Transfer students are required to have a complete course in organic chemistry to include aliphatic and aromatic compounds, 8 hours.)

Physics. 8 hours.

Mathematics. 3 hours. (College algebra is the minimal course requirement.) Trigonometry, or higher mathematics, is recommended.

Electives to complete the required hours and to meet WVU Core Curriculum requirements.

Courses such as bacteriology, parasitology, and anatomy should not be taken until after the completion of the sophomore year. A foreign language is recommended for students who plan to do graduate work.

### **Admission to the Program**

1. Applicants should have a minimum grade-point average of 2.5. Applicants with less than a 2.5 grade-point average may be admitted on probation. Applicants with less than a 2.0 grade-point average, either cumulative or in the sciences, will not be admitted.

2. References will be reviewed and considered. A grade-point average of 2.5, or above, does not necessarily assure admission.

3. Applicants admitted to the program must maintain a grade-point average of 2.0 each semester. Students in the Medical Technology Program are expected to conduct themselves in a manner consistent with the ethics of the profession.

Academic Advancement and Standing

Junior Year—(First Year in the Medical Technology Program)

- 1. Any student having one or more Fs or more than 2 Ds at the end of the junior year will be suspended from the program.
- 2. Academic due process will be followed when students are suspended from the program.
- 3. No student with a grade-point average of less than 2.0 will be advanced to the senior year. A student admitted to the senior year with any grade of I (Incomplete) must satisfactorily remove the Incomplete within the following semester, unless permission for an extension is granted by the Senior Year Committee on Academic Standards.
- 4. No student will be advanced to the senior year unless recommended by the Junior Year Committee on Academic Standards regardless of academic average.

Second Year

- 1. To successfully complete the senior year, a student must maintain an overall grade-point average of 2.0 for each semester of the senior year.
- 2. The faculty of the program may suspend or place on probation at anytime a student who is not maintaining a 2.0 grade-point average.
- 3. If, in the judgment of an instructor, a student demonstrates a marked lack of understanding of course material, even though the student has an acceptable didactic average, a grade of I (Incomplete) will be submitted for that student. It is the student's responsibility to consult with the instructor for removal of an Incomplete.
- An Incomplete grade must be removed within the following semester or will be recorded as F unless an extension has been petitioned for by the student and granted by the Senior Year Committee on Academic Standards.
- 4. Graduation requires completion of all academic work in a satisfactory manner and recommendation of the faculty of the School of Medicine.
- 5. If in the judgment of the faculty a student's overall performance is not consistent with good patient care or the public interest (regardless of grade-point average), the student may be suspended or required to do remedial work.
- 6. To suspend a student with an acceptable grade-point average requires appropriate documentation and recommendation from two thirds of the faculty in the program of medical technology.
- 7. Academic due process will be followed when students are suspended.
- 8. Any student who withdraws from the program in the senior year for any reason must petition the faculty in medical technology for readmission if such is desired.

CURRICULUM PLAN  
Premedical Technology

First Year			
First Semester	Hr.	Second Semester	Hr.
Chem. 15—Inorganic .....	4	Chem. 16—Inorganic .....	4
Elective* .....	3	Engl. 1—Comp. & Rhet. ....	3
Math. 3, 4, or higher .....	3	Elective* .....	3
Biol. 1.....	4	Biol. 2.....	4
M. Tec. 1** .....	1	M. Tec. 2** .....	1
	15		15



## Second Year

First Semester	Hr.	Second Semester	Hr.
Chem. 115—Analytical.....	4	Chem. 131—Organic .....	4
Electives* .....	6-7	Electives* .....	6-9
Phys. 1.....	4	Phys. 2.....	4
Engl. 2—Comp. & Rhet. ....	3		
M. Tec. 3** .....	3		
	<u>20-21</u>		<u>14-17</u>

\*Electives from Group A and Group B are to be selected to meet University Core Curriculum requirements.

\*\*M. Tec. 1 and 2 are not required subjects. It is highly recommended that all students take these courses. M. Tec. 3 may be taken if electives are completed in the sophomore year.

## Medical Technology

### Third Year

#### (Medical Technology I)

First Semester	Hr.	Second Semester	Hr.
M. Tec. 100.....	4	Parasitol. 224.....	4
Bioch. 139 .....	5	M. Bio. 223 .....	5
Physi. 241 .....	4	Bioch. 239 .....	4
Elective .....	3	M. Tec. 101.....	4
	<u>16</u>		<u>17</u>

### Fourth Year

#### (Medical Technology II)

Students receive didactic and clinical instruction in the University Hospital laboratories after completion of the junior year. The course of study begins with the summer session and covers three academic semesters. Students may be required to be "on duty" at irregular hours due to the professional nature of the collegiate program. Likewise, if the student has excessive absences during the senior year, the time loss must be made up at the end of the school year.

Students register for the following courses during the three semesters of study.

	Hr.
M. Tec. 200—Orientation .....	No Credit
M. Tec. 220—Immunohematology and Blood Banking .....	2
M. Tec. 221—Immunohematology and Blood Banking Laboratory .....	5
M. Tec. 230—Clinical Chemistry .....	2
M. Tec. 231—Clinical Chemistry Laboratory .....	5
M. Tec. 240—Clinical Hematology .....	2
M. Tec. 241—Clinical Hematology Laboratory .....	5
M. Tec. 250—Clinical Microbiology .....	2
M. Tec. 251—Clinical Microbiology Laboratory .....	5
M. Tec. 260—Instrumentation .....	2
M. Tec. 265—Laboratory Management .....	2
M. Tec. 270—Clinical Microscopy .....	2
M. Tec. 275—Clinical Histopathology .....	2
M. Tec. 280—Clinical Immunology .....	2
M. Tec. 290—Scientific Research and Writing .....	1-4

42

## Degree

The degree of Bachelor of Science in Medical Technology is granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

## Graduate Program

The WVU Medical Technology graduate program prepares graduate medical technologists for positions either as administrators and teachers in medical technology educational programs, or as supervisors in special areas of the clinical laboratory. The primary objective is to assist in development of knowledge in an area in administration, in education, or a special area of interest selected by the student which may be a special medical laboratory science as the specific area applies to laboratory medicine. Specializations include clinical chemistry, clinical microbiology, hematology, and immunochemistry. The specific course work requirements for the master of science degree rests with the graduate adviser in the student's specific area of interest.

*Graduate Committee:* Professors J. Holter, R. Iamanino, B. Love, H. Mengoli, D. Moore, Jr., N. Rodman, and S. Jagannathan.

### Admission

Applicants must have a baccalaureate degree in medical technology from an accredited institution or a baccalaureate degree in an allied field and be a certified medical technologist with an acceptable certifying agency.

The area of concentration in medical technology desired by the student is considered in the evaluation of the undergraduate record as follows:

1. Individuals who desire to do special study in clinical chemistry, hematology, or immunochemistry must have completed a minimum of 8 hours of physics, 3 hours of mathematics, 4 hours of organic chemistry, and 4 hours of quantitative chemistry on the college level.
2. Individuals who desire to do special study in microbiology must have completed 4 hours of organic chemistry and 16 hours of biological sciences.
3. A minimum of one year's experience in a clinical laboratory is required for admission.

Students will be required to make up deficiencies in the above, as well as other deficiencies deemed necessary by the adviser.

Applicants must have a minimum undergraduate grade-point average of 2.5 (based on A equals 4.0 grade points) for admission.

All applicants to the graduate program are required to take the general aptitude part of the Graduate Record Examination. Results should be sent to the Medical Technology Programs Office, West Virginia University.

Two letters of reference must be on file in the Medical Technology office. One letter should be from the major adviser in the undergraduate college and another from the immediate supervisor of the applicant's present position. An interview will be requested for all applicants who meet the requirements for admission.

Applicants are selected for admission on the basis of scholastic standing, recommendations, and interest in the field of medical technology. The number of applicants accepted is necessarily limited by the available facilities; and in general, applicants with the most experience are considered first.

### Application Procedure

A preliminary application is filed in the Medical Technology office.

Letters of recommendation are sent to the Medical Technology Programs Office.

After approval of the preliminary application, the admission procedure is the same as for other programs in WVU graduate studies.

A personal interview may be required before final admission to the program. This interview will give the graduate student an opportunity to evaluate the program and to determine if the program will offer the educational opportunities which the student desires.

## Course of Study

It is expected that the students who enter the graduate program in Medical Technology will have a goal in mind and a special field of interest in medical technology. The program is tailored to the needs of the student as far as possible. A minimum of 36 semester hours of credit including a research problem is required. The student selects a major area of concentration from either education, supervision, or administration, and a minor area from clinical microbiology, clinical chemistry, clinical hematology, or immunohematology.

A minimum of 12 semester hours of course work in education to include the following is required of all students:

(A). The three following courses are required:

Ed. P. 320—Introduction to Research .....	3 hr.
Ed. P. 330—Advanced Education Measurements .....	3 hr.
Ed. F. 320—Philosophic Systems and Education .....	3 hr.

(B). The student selects one of the following:

Hl. Ed. 305—Philosophy of Health Education .....	3 hr.
Ed. P. 260—Instructional Media and Technology .....	3 hr.
Ed. P. 360 or 361—Instructional Systems .....	3 hr.
Ed. P. 450—Psychological Foundations of Learning .....	3 hr.
Ed. P. 451—Principles of Instruction .....	3 hr.
Ed. A. 330—Principles of Education Leadership .....	3 hr.
Ed. A. 331—Principles of Supervision .....	3 hr.
Ed. F. 300—Sociology of Education .....	3 hr.

(C). Ed. P. 311 (Statistical Methods), Stat. 311 (Statistical Methods), or C. Med. 311 (Biostatistics), is strongly recommended.

Other courses to complete 36 semester hours are selected by the student (with the help of the adviser) in the area of concentration selected by the student. Students may select courses in departments in schools other than the School of Medicine.

All students must complete a minimum of 18 semester hours in a science related to medical technology including Seminar (3 hr.) and Problem Study (6 hr.).

All students must rotate for orientation purposes through all sections of the University Hospital Clinical Laboratories to include microbiology, hematology, chemistry, immunohematology, and histopathology for a minimum of two days in each laboratory or a total of ten days.

In addition, at the discretion of the student's adviser, other requirements in teaching, supervision, and administration may be necessary.

The adviser works out with the student a plan of study for the entire graduate program. This plan is usually made at the end of the first semester of the student's graduate study. A copy of this "plan of study" is signed by the adviser and student and sent to the Medical Technology Office to be put in the student's file.

## Examinations

A final written comprehensive examination in the major and minor interest areas is given approximately one month before the date on which the degree is to be awarded.

An oral defense of the problem is given one month after submission of the Problem Study in its final form to the Graduate Committee.

## Requirements for Degree

All requirements for the master of science degree, as outlined in the *WVU Graduate Catalog*, must be fulfilled. These requirements can be fulfilled in three semesters of full-time work, but ordinarily at least four semesters are required for completion of the degree requirements.

Degree candidates must have a 3.0 grade-point average and must have removed all incomplete grades and deficiencies.

All students must complete a problem study (see M. Tec. 497).

## Registration Requirement

Owing to the limit on the number of students who can be enrolled in the graduate program in medical technology, all students (part-time and full-time) must enroll each semester to continue in the program.

## Medical Technology (M. Tec.)

1. *Orientation to Medical Technology*. I, II. 1 hr. Principles and practices of medical technology and the role of the medical technologist as a member of the health team.
2. *Orientation to Medical Technology*. II. 1 hr. Continuation of work of M. Tec. 1.
3. *Introduction to Medical Laboratory Technology*. I. 3 hr. Introduces the procedures used in the clinical laboratory and demonstrates their relationship to health and disease.
100. *Medical Technology*. I. 4 hr. Gross and microscopic structure of human body as it applies to the practice of medical laboratory technology.
101. *Medical Technology*. II. 4 hr. Continuation of M. Tec. 100.
200. *Orientation*. S. No credit. (For senior students.) Principles and practices of medical technology in relation to the hospital and clinics.
220. *Immunohematology and Blood Banking*. I, II. 2 hr. Lectures on immunohematology and blood banking theory and practice.
221. *Immunohematology and Blood Banking Laboratory*. Arranged. 5 hr. Clinical laboratory practice in blood banking procedures. Emphasis on procedures required for collection and preparation of blood and blood components for transfusion, special techniques, antibody studies, and problem solving.
230. *Clinical Chemistry*. I, II. 2 hr. Lectures on principles of clinical chemistry procedures; their clinical significance and implication in diagnosis.
231. *Clinical Chemistry Laboratory*. Arranged. 5 hr. Practice in the clinical chemistry laboratory.
240. *Clinical Hematology*. I, II. 2 hr. Lectures in hematologic theory and practice.
241. *Clinical Hematology Laboratory*. Arranged. 5 hr. Application of hematological principles to laboratory medicine. Emphasis on routine and specialized procedures, evaluation and problem solving.
250. *Clinical Microbiology*. I, II. 2 hr. Presentation and discussion of current methodology employed in the processing of clinical microbiology specimens, isolation and identification of pathogenic microorganisms, and determination of antimicrobial sensitivities.



251. *Clinical Microbiology Laboratory*. Arranged. 5 hr. Practice in the clinical microbiology laboratory to include isolation and identification of microorganisms; processing of specimens and antibiograms. Includes experiences in pathogenic mycology and parasitology.
260. *Instrumentation*. I, II, S. 2 hr. Principles of clinical laboratory instrumentation for medical technologists including principles of operation, maintenance, and troubleshooting.
265. *Laboratory Management*. I, II. 2 hr. Laboratory organization, economics, ethics, and records.
270. *Clinical Microscopy*. I, II, S. 2 hr. Lectures and laboratory practice in urinalysis, gastric analysis, pregnancy tests, and other procedures.
275. *Clinical Histopathology*. I, II, S. 2 hr. Lectures and laboratory practice in preparation of human tissues and organs for gross and microscopic examination.
280. *Clinical Immunology*. I, II, S. 2 hr. Lectures and laboratory practice in the principles of clinical immunology and their relationship to clinical laboratory technology.
290. *Scientific Research and Writing*. I, II. 1-4 hr. Conducting a scientific research project in medical technology and writing a scientific article for publication. Oral presentations are included.
300. *Seminar*. I, II, S. 1 hr. Seminars include topics in laboratory management and education in medical technology, and timely topics. Minimum of 3 semester hours to include all three topics is required of all graduate students in the medical technology program.
491. *Advanced Study*. I, II, S. 1-6 hr. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
497. *Research*. I, II, S. 1-15 hr. Student is required to pursue study on a problem in the student's area of concentration. This study is reported in a thesis-style manuscript. For this study and report, the student registers in M. Tec. 497. Total number of hours earned in M. Tec. 497 is determined by the student's adviser. As many as 9 semester hours may be taken during one semester or, by arrangement with the adviser, credit hours may be taken over several semesters. In the final compilation for degree requirements, only 6 semester hours in M. Tec. 497 will be counted toward fulfillment of the 36 required semester hours for the degree even though the student may have registered for as many as 15 hours in M. Tec. 497.

## Division of Physical Therapy

The Division of Physical Therapy, under the auspices of the School of Medicine, offers the final two years of a baccalaureate program leading to a degree in physical therapy.

The first two years of study may be completed in the WVU College of Arts and Sciences, or any other accredited institution which offers courses comparable to the admission requirements of the Division of Physical Therapy. To be eligible for a degree a student must complete the final two years of the curriculum at WVU.

Admission to the third year is based upon 62 or more credit hours of study which satisfies the University Core Curriculum requirements and the prerequisites, or their equivalent, of the Division of Physical Therapy. *Registration in the first two years does not automatically assure the student a place in the junior class. A student will be accepted on a competitive basis and selection will be based on scholastic standing and on those personal characteristics which are desirable in physical therapists.*

The student must satisfactorily complete a period of clinical internship before the awarding of the baccalaureate degree. Expenses incurred during this time (room, board, and transportation) must be borne by the student. A Certificate of Proficiency in Physical Therapy then will be awarded which entitles the graduate to seek membership in the American Physical Therapy Association and to become eligible for state licensure for the practice of physical therapy. A physical therapist can practice professionally only after meeting examination and other licensure requirements in the state where employment is desired.

## **Admission to the Professional Program**

A personal interview with the Admissions Committee is required. *Only those students who have at least a 2.6 grade-point average and a 2.75 science average (on a 4.0 scale) and who will have completed all the prerequisites of the Division of Physical Therapy by the current spring semester will be interviewed.* In addition to satisfying the prerequisite and Core Curriculum requirements, the applicant to physical therapy must also have: (1) volunteer or work experience in physical therapy and (2) scores on the Allied Health Professions Admission Test (given at major universities) which must be submitted to the Division of Physical Therapy. The Admissions Committee will advise the applicant of the time and place for the interview. Individuals who do not meet the above requirements but who believe extenuating circumstances justify admission may petition the Admissions Committee for an interview. Reasons why the application should receive special consideration should be clearly stated in the petition.

Official enrollment forms are available at the Office of the Assistant to the Dean, Admissions and Records, Medical Center, beginning December 1 of each year. Application forms should be returned no later than March 1 in the year admission is desired.

*Because of the large number of applicants and limited openings available in WVU Medical Center programs, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered.*

## **Academic Standards**

### **Clinical Education Program**

Students must satisfactorily complete the pre-internship clinical education program. During this time students will be expected to defray any and all costs of the program. The Clinical Internship Program is scheduled in the summer of the Senior Year. Before the student is allowed to leave for clinical internships the student must: (1) have completed *all* academic requirements of the program satisfactorily; (2) be of good health and have a full health insurance policy which will be in effect the entire internship period; (3) have an active professional liability insurance policy; (4) be prepared to defray the following types of costs: tuition, travel, room and board, and any incidental cost.

### **Promotions and Suspensions**

Physical therapy students must register for all prescribed courses for each semester, except by special permission from the Academic Standards Committee of the Division of Physical Therapy. Permission for repetition of work may be granted only by the Academic Standards Committee.

1. No student will be permitted to register for any work of second year until all courses for the preceding year have been completed successfully.

2. If in the opinion of the faculty that work completed in any unit of a course indicates that a student has a serious lack of understanding of that unit a grade of I (incomplete) will be submitted for that student. This may occur even though the student has an acceptable average of all units for the course. It is the student's responsibility to consult with the instructor about the means and schedule for removing incomplete grades.

3. A student who does not assume the responsibility for removing incomplete grades, or who fails to so do in a satisfactory manner, will be given an F for the course and will not be permitted to register for advanced courses.

4. No student will be permitted to register for clinical internships (Ph.Th. 290) until all other courses have been satisfactorily completed.

5. Notwithstanding the above rules, a student whose performance has been considered unsatisfactory by the Academic Standards Committee may be required, as a condition for advancement or graduation, to complete special requirements and/or an extended period of study. Such a requirement or special opportunity may be made available at the discretion of the Academic Standards Committee. In addition, the Division of Physical Therapy reserves the right to suspend any student who does not perform at an overall level considered satisfactory for patient care.

6. A student who has been suspended may apply to the Admissions Committee of the Division of Physical Therapy for readmission.

## Curriculum Plan

This curriculum is designed to satisfy the course requirements for admission to the professional portion of the curriculum in Physical Therapy offered by the School of Medicine. The Core Curriculum requirements must be satisfied, and a total of 62 hours is required for admission to the first professional year. This suggested curriculum plan allows latitude in career choice and is basically compatible with various curricula in the arts and sciences.

### First Year

First Semester	Hr.	Second Semester	Hr.
Psych. 1**	3	Engl. 1	3
Chem. 15**	4	Chem. 16**	4
Biol. 1**	4	Biol. 2**	1
Electives*	6	Electives*	6
	17		17

### Second Year

First Semester	Hr.	Second Semester	Hr.
Engl. 2	3	Psych. Elect.**	3
Psych. 141**	3	Phys. 2**	4
Stat. 101**	3	G.P.E. 2	1
Phys. 1**	3	Electives*	9
G.P.E. 1	1		
Electives*	3		
	17		17

### Third Year

First Semester	Hr.	Second Semester	Hr.
Path. 128 .....	2	Anat. 102 .....	3
Anat. 101 .....	4	Anat. 208 .....	2
Anat. 103 .....	2	Ph. Th. 110 .....	3
Physi. 241 .....	4	Ph. Th. 112 .....	3
Ph. Th. 111 .....	5	Ph. Th. 114 .....	2
Ph. Th. 117 .....	1	Ph. Th. 116 .....	1
		Ph. Th. 118 .....	3
	18		17

### Fourth Year

First Semester	Hr.	Second Semester	Hr.
Ph. Th. 271 .....	4	Ph. Th. 270 .....	3
Ph. Th. 273 .....	3	Ph. Th. 272 .....	2
Ph. Th. 275 .....	3	Ph. Th. 274 .....	4
Ph. Th. 277 .....	3	Ph. Th. 276 .....	3
Ph. Th. 279 .....	4	Ph. Th. 278 .....	5
Ph. Th. 281 .....	1	Ph. Th. 282 .....	1
	18		18

### Summer

	Hr.
Ph. Th. 290 .....	3-6

\*Electives: Students are required to satisfy University Core Curriculum requirements. In addition, these electives are suggested: Nutrn. 71; Biol. 166, 242, 243, 245, 281, 282; Math. 4; Spch. 11, 106, 221.

\*\*Courses required for admission to the Division of Physical Therapy.

## Courses of Instruction in Physical Therapy (Ph. Th.)

Professor Burkart (*Director*); Associate Professors Barnes, Meacci, Petronis, and Weaver; Assistant Professor Hart; Instructor Harris.

(Courses included in the physical therapy curriculum, but not listed here, may be found in the Basic Sciences section of this catalog.)

110. *Functional Anatomy*. II. 3 hr. The musculoskeletal and neuromuscular systems including biomechanics, principles of movement, and analysis of muscle and joint action. Abnormal function due to physical disabilities and pathological disturbances. Students study normal human development and maturation through laboratory sessions involving evaluation and observation of children ranging in age from newborn to 5 years.
111. *Physical Therapy Principles and Physical Agents*. I. 4 hr. PR: Biol. 1, 2; Chem. 15, 16. Lecture-laboratory introduction to physical therapy and orientation to patients. Safety procedures, gait training, and nursing procedures related to physical therapy orientation to theory and application of hydrotherapy, thermotherapy, cryotherapy, actinotherapy, massage, and ultrasound are presented.
112. *Pulmonary Physical Therapy*. II. 3 hr. Correlation of anatomy, physiology, pathology, and treatment of pulmonary conditions. Laboratory in pulmonary evaluations and respiratory treatment procedures. Lectures and case presentations in medicine and surgery concerning chest and thoracic conditions.
114. *Medicine and Neurology*. II. 3 hr. PR: Ph. Th. 111. Lectures in medicine including dermatology, aging, neurology, pharmacology and vascular disorders.
116. *Clinical Education 1*. II. 1 hr. Students perform basic treatment procedures under the supervision of experienced therapists in various clinics. (*Graded Pass-Fail only.*)



117. *Seminar. I.* 1 hr. PR: Ph. Th. 111. Investigation of selected problems and issues.
118. *Basic Therapeutic Exercise. II.* 3 hr. This course includes the application of principles and techniques of traditional forms of anaerobic and aerobic exercises and goniometry. Isotonic, isometric, and isokinetic exercises are presented with an emphasis on the understanding of human cardiopulmonary functions under the stress of motor activity. Laboratory work in the application of basic exercises and pertinent cardiopulmonary stress tests is included.
270. *Organization and Management. II.* 4 hr. PR. Ph. Th. 275, 281. Basic principles and philosophy of management and the organization with emphasis on styles of leadership, group dynamics, theories of motivation, delegation of responsibility and authority, conflict management, verbal and nonverbal communications, decision analysis and fiscal management.
271. *Electrotherapy and Electromyography. I.* 4 hr. Orientation to theory and application of electrical currents. Laboratory experience in electrical diagnosis and treatment procedures. Basic principles and actual clinical experience with patients offered in electromyography, including nerve conduction and needle insertion studies. Use of electrical stimulation for pain control is also explored.
272. *Professional and Community Relationships. II.* 2 hr. Community health organization, including local, state, and national facets such as Medicare-Medicade and welfare. Planning based on chronic disease epidemiology. Role of physical therapist and other allied health personnel in providing comprehensive health care for chronically ill and geriatric population. Students become involved in care of the home-bound.
273. *Physical Evaluation. I.* 4 hr. PR: Ph. Th. 110, 118. Principles and techniques of performing evaluation testing procedures within the scope of the physical therapist, including manual muscle testing, neurological, ADL, and basic orthopedic evaluations.
274. *Orthopedic Physical Therapy. II.* 3 hr. PR: Ph. Th. 110, 118, 273. Selected lectures and cases in orthopedics. Emphasis on effects and treatment of disease and injury to musculoskeletal and neuromuscular systems. Laboratory practice in orthopedic assessment and procedures, including mobilization techniques.
275. *Professional Literature and Research. I.* 3 hr. Current literature method writing, statistics, and introduction to research methodology. A senior project is required.
276. *Elective Study. II.* 3 hr. Highly skilled techniques used in physical therapy are many and varied. It is beyond the scope of any baccalaureate program to offer such skill to every student in all areas. Therapists are beginning to specialize in certain areas. The student chooses a particular area and develops it to the student's fullest capabilities in the allotted time.
277. *Clinical Teaching. I.* 2 hr. Emphasis on the physical therapist fulfilling numerous teaching roles. Students develop skill and techniques in the facilitation of learning, objective writing, A-V utilization and development of evaluation tools for both clinical and didactic settings.
278. *Correlative Rehabilitation. II.* 5 hr. Lecture, case presentations, and laboratory practice concerning the pathology, evaluation, and treatment in the areas of spinal cord injuries, amputations, and burns. Underlying philosophy and principles of comprehensive care of the handicapped. Prosthetics, orthotics, bowel and bladder training, assistive and supportive devices, and wheelchair evaluations.
279. *Advanced Therapeutic Exercise. I.* 4 hr. Correlation of the basic principles acquired from study of gross anatomy, neuroanatomy, pathology, physiology, and functional anatomy with the scientific application of bodily movement. In-depth study of types and desired effects of exercise and methods and techniques primarily concerned with neuromuscular re-education. Laboratory practice consists of application of specific neurophysiological techniques to patients presented with various neuromuscular problems.

281. *Clinical Education 2. I.* 1 hr. Continuation of Ph. Th. 116. The student's participation in treatment programs is increased and enlarged to include basic testing and evaluation procedures. (*Graded Pass-Fail only.*)
282. *Clinical Education 3. II.* 1 hr. Supervised experience in more specialized procedures and testing techniques and patient program design. (*Graded Pass-Fail only.*)
290. *Clinical Education 4. S.* 1-12 hr. Three full-time summer affiliations of six to eight weeks each in a variety of extramural facilities, such as a general hospital, children's facilities, rehabilitation services, and public health. (*Graded Pass-Fail only.*)

## School of Nursing

Nursing shares with other disciplines the overall purpose of the health care system in assisting clients to attain, regain, and retain optimal health. Specifically, the purpose of nursing is to assist clients wherever they are, in the performance of those activities contributing to optimal health (or a peaceful death) the clients would normally initiate and perform unaided if they had the necessary strength, knowledge, and motivation.

The practice of nursing embodies a holistic concept of man. This concept is derived from a synthesis of general education and nursing education. General education is that component of learning derived from the whole of knowledge and truth that is not specialized or particular to any field but which supports many fields. It provides the individual with basis for moral grounding, with a knowledge of man and the universe, a basis for understanding of self and others, as well as an appreciation of the past, an understanding of the present, and the process for predicting the future. These primary concepts form a foundation for subsequent learning in the applied discipline of nursing. Nursing education is that process by which the nurse continually synthesizes the conceptual base, while developing and applying one's intellectual, interpersonal, and technical skills in assisting individuals, families, and communities to meet their health needs. This process unifies practice, teaching, and research in the advancement of nursing.

The faculty believes that man is a physiological, psychological, social and spiritual being, capable of rational thought and action. Throughout the life span, one progresses through developmental stages and continually strives to meet basic human needs in a uniquely patterned way. Within the context of socio-cultural backgrounds, individuals perceive and respond to stimuli as integrated wholes. Individuals maintain basic human integrity through the process of dynamic continuous interaction with their internal and external environment.

Man is a member of innumerable systems within a total society which is organized to meet client recognized needs, with the family being the primary system for meeting health needs. Society organizes health care systems to assist the family in meeting the health needs of its members. Each person has the right of access to those resources which will assist in attaining and maintaining optimal states of health.

Health is a dynamic state which constantly fluctuates among varying degrees of wellness and illness. Health states embody physiological, psychological, social, and spiritual dimensions. The optimal state of health which can be attained and maintained is unknown but is influenced by genetic endowment, the environment in which individuals live, and their ability to cope with actual and potential stresses.

The faculty believes learning is a life-long process, enhanced by a climate of personal acceptance of the learner as an integrated being with internal motivation, attributes, dignity, and worth. Learning is a progressive and cumulative experience resulting in changed behavior which becomes useful in subsequent learning situations.

The teaching/learning process includes opportunities for teacher-student interaction in setting goals, selecting and evaluating learning experiences, and in appraising instructional methods and student progress. The process of education takes place in an atmosphere characterized by a democratic spirit in which student and faculty can share learning experiences. This climate encourages the development of intellectual curiosity, systematic inquiry, the capacity for self-direction, and a sense of commitment to continued learning. Through this educative process, faculty and students continue to develop as informed persons responsible for contributing to the improvement of the profession and society through on-going creative efforts.

Undergraduate education in nursing prepares persons capable of beginning professional nursing practice and provides foundation for graduate education in nursing. Upon completion of the baccalaureate curriculum, the nurse can practice in a variety of settings and with clients of various developmental levels. The graduate uses process skills to maintain, restore, or improve health states of clients, and uses leadership theory to effect change. The baccalaureate graduate uses a conceptual base to evaluate and modify nursing role in relationship to client needs and expectations, and is prepared to support efforts in expanding nursing knowledge.

Graduate education in nursing prepares clinicians capable of leadership in developing and expanding nursing knowledge, skills, and practice competencies in light of societal needs. Preparation at the master's level provides the opportunity for the student to demonstrate self-direction and effective interactions with other health professionals in improving nursing practice and the health care delivery system. The master's graduate is able to provide quality health care in a variety of settings while clarifying and redefining nursing roles.

## Admission

To qualify for admission to the School of Nursing basic program a candidate must have completed one year of prescribed courses in an accredited college or university. Applicants are eligible for review by the Admissions Committee after completion of one full semester of course work in an accredited college or university. The prescribed courses include subjects such as: Chemistry, 8 hours; English Composition, 3 hours; Sociology, 3 hours; Psychology, 3 hours; Nutrition, 3 hours; Life-Span/Growth and Development, 3 hours; Core subjects, Biology, 4 hours; and/or electives.

A dominant factor in the number of students admitted is the limitation of space. Currently, the maximum number of basic students which can be accommodated is 72. *Since West Virginia University is a state university, and since the number of qualified applicants exceeds the number which can be accommodated, primary consideration is given to applicants from West Virginia. However, up to 10 percent of those admitted to each class may be from out of state.*

Application forms for the School of Nursing are distributed by the Office of Admissions and Records at the Medical Center after December 1. Application for admission to the School of Nursing must be made by February 15 of the year the candidate wishes to be admitted. The application may be



presented in person or mailed directly to the Assistant to the Dean of Admissions and Records, West Virginia University Medical Center, Morgantown, WV 26506. An application fee of \$10.00, payable to West Virginia University, must accompany the completed application. The deadline for receipt of transcripts and other required materials is February 15.

The applicant's academic record is the major factor in the decision on admission. The West Virginia resident must have a grade-point average of 2.5 or above, on a scale of 0.0 to 4.0, to qualify for consideration. Residents of other states must have an average of 3.2 or above to be considered. West Virginia applicants whose grade-point average falls between 2.3 and 2.5 may petition in writing to the Admissions Committee for special consideration. Out-of-state residents with a grade-point average between 3.0 and 3.2 also may petition. Such a petition must be submitted along with the application and must clearly state why the applicant should receive special consideration.

The review of applicants takes approximately two months. The students are notified by mail after review of all applicants is completed. Two weeks after receipt of the letter of acceptance, the student must send a letter stating acceptance of the position to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. A \$50.00 advance deposit must accompany the letter. This deposit is applied toward the registration fees for the first semester. The deposit is nonrefundable should the student decide not to enter after formally accepting a place in the class.

## **Transfer Students**

A student from an accredited college or university is eligible for admission by presenting a record of courses comparable to those required in this curriculum. Application for transfer students should be initiated by January 1. Deadline for receipt of transcripts or other required materials is February 15. Apply to: Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

## **Registered Nurse Students**

The School of Nursing offers graduates of diploma and associate degree nursing programs the opportunity to complete requirements for the baccalaureate degree in nursing at the Morgantown campus, at the Charleston Division of the WVU Medical Center, and by extension at Shepherdstown, Parkersburg, and Beckley. General education credits earned in any accredited college or university may be applied toward the fulfillment of the degree requirements, if the course work is comparable.

Registered Nurse applicants are admitted directly to the School of Nursing. Acceptance and placement in the program is dependent upon the individual's academic record and upon the number of spaces available in the program. The license to practice nursing and a grade-point average of 2.5, or better, are required. Registered Nurses whose grade-point average falls below 2.5 may petition in writing to the Committee on Admissions for special consideration.

About 30 hours of general education courses that meet the WVU Core Curriculum and School of Nursing requirements are recommended before enrollment in the first nursing course, Nursing 99, Basic Concepts of Professional Nursing. Courses from the following are appropriate: English 1 and 2, 6 hours; Chemistry, 6-8 hours; Introductory Psychology, 3 hours; Introductory Sociology, 3 hours; Anatomy, 3-4 hours; Physiology, 3-4 hours;



Microbiology, 3-4 hours; Pharmacology and Toxicology, 3-4 hours; Nutrition, 3 hours; Biology 3-4 hours. Additional Core A, B, or elective credit is advised before enrolling in Nursing 99. The second semester of chemistry may be waived if the applicant has successfully completed comparable laboratory science courses and meets other science requirements (anatomy, physiology, microbiology, biology, and pharmacology and toxicology). Additional courses may be advised based on the judgment of the adviser upon review of the student's background.

All registered nurse students are required to enroll in Nursing 99 (Basic Concepts of Professional Nursing.) The purpose of this course is to facilitate transition to the baccalaureate curriculum, to assist students with identified learning needs relevant to the curriculum, and to diagnose the students' readiness for advance placement of junior level courses.

Graduates of associate degree programs establish lower-division nursing credit by the transfer of hours. Graduates of diploma programs establish lower-division credit by comprehensive challenge examination of sophomore nursing courses.

Upon successful completion of Nursing 99, and the establishment of lower-division credit, the registered nurse student is eligible for the advanced placement experience. This experience is a conceptual approach to the challenge of junior courses. During this experience a diagnostic and prescriptive analysis of the learning needs of the individual student is made. This diagnosis forms the basis for progression through the remainder of the nursing curricula. Enrollment in junior or senior courses and/or special prescriptive work may follow the advance placement experience. All prerequisites must be met before advancement into senior nursing courses. The senior courses must be taken by enrollment.

Credit for all required nursing courses must be established by enrollment or by advanced placement.

Upon receipt of a letter of acceptance into the program, the student must contact his/her adviser to establish a progression plan. Six weeks before beginning Nursing 99, the student must notify the Office of Admissions and Records that he/she will be beginning the nursing courses.

Requests for application forms for the Morgantown campus and extension sites should be addressed to the Assistant to the Dean of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

Application forms for the program at Charleston may be obtained from the Student Affairs Coordinator, Charleston Division, WVU Medical Center, 3110 MacCorkle Ave., S.E., Charleston, WV 25304.

Further information about the program may be obtained from Chairperson, Sophomore Academic Unit, School of Nursing, WVU Medical Center, Morgantown, WV 26506; or Chairperson, Charleston Academic Unit, School of Nursing, Room 2017, WVU Medical Education Bldg., 3110 MacCorkle Ave., S.E., Charleston, WV 25304.

## **Academic Standards and Graduation Requirements**

The student must: (1) maintain a cumulative grade-point average of 2.0 or better in all work attempted; (2) pass all graded nursing courses with a grade of C or better; and (3) pass all required courses.

A student who fails to meet the requirements listed above must present to the adviser an acceptable plan for meeting the requirements. This plan must be within the policies and standards set by the Committee on Academic Standards.

The degree of Bachelor of Science in Nursing (B.S.N) is conferred upon completion of a minimum of 127 hours.

Fees, Expenses, Housing, Transportation

Students registering pay the fees shown in the WVU Medical Center fees charts, plus special fees and deposits as required. Fees are subject to change without notice.

Expenses of students attending WVU vary widely according to their course of study and their individual tastes.

Students are expected to provide their own equipment and instruments for the clinical courses.

Information concerning financial assistance and application forms may be obtained by visiting or writing the Financial Aid Office, Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506. Telephone 304/293-3706.

The University Housing and Residence Life Office, G-18 Towers (phone 304/293-3621), provides information concerning University-owned housing. The Student Life Office in Moore Hall provides information concerning privately owned, off-campus housing, (phone 304/293-5611).

Some clinical experiences require the student to travel in a multi-county area. Each student is responsible for providing her/his own transportation.

Curriculum

The conceptual framework of the WVU School of Nursing is based on four concepts. These are man, health, environment, and process.

Man assumes many roles in life. In nursing these roles are specific yet interdependent. Man-role is conceived as either that of the man-nurse or the man-client. When man in the client role and man in the nurse role come together for the purpose of the nurse assisting the client to achieve health, the process becomes operational. Process is the means by which the goal is attained. The process between man-nurse and man-client takes place in and influences a certain environment. On the other hand, the environment influences process, man-nurse, man-client, and health in many ways.

Thus, the curriculum design for both undergraduate and graduate programs is derived from basic beliefs about the major concepts and from beliefs about learning and holism. In essence, a framework is initially provided to identify the core concepts and their relationships. This framework becomes the student's vehicle or mechanism through which added knowledge can be organized and syntheized, generating new ideas.

SUGGESTED PLAN OF PROGRESSION

FIRST YEAR			
First Semester	Hr.	Second Semester	Hr.
Chem. 11 .....	4	Chem. 12 .....	4
Psych. 1 .....	3	Engl. 1 .....	3
Soc. & A. 1 .....	3	Biol. 2 .....	4
Nutr. 71 .....	3	Psych. 141 .....	3
Core A .....	3	Core A .....	3
<hr/>		<hr/>	
16		17	

## SECOND YEAR

First Semester	Hr.	Second Semester	Hr.
Nsg. 80 .....	4	Nsg. 75 .....	2
Nsg. 81 .....	2	Nsg. 82 .....	4
Anat. 101 .....	4	Nsg. 83 .....	2
M. Bio. 26 .....	4	Physi. 141 .....	4
Engl. 2 .....	3	Pcol. 160 .....	3
	<hr/> 17		<hr/> 15

## SUMMER BETWEEN SECOND AND THIRD YEAR

	Hr.
Nsg. 180 .....	3
Nsg. 181 .....	<u>3</u>
(Basic Students only)	6

## THIRD YEAR

First Semester	Hr.	Second Semester	Hr.
Nsg. 182 .....	4	Nsg. 184 .....	4
Nsg. 183 .....	4	Nsg. 185 .....	4
Nsg. 175 or Soc. & A. 211 .....	2-3	Nsg. 175 or Soc. & A. 211 .....	2-3
Core A/elective .....	<u>3-6</u>	Core A/elective .....	<u>3-6</u>
	13-17		13-17

(Advanced standing experience of all junior level  
available for the RN's) ..... 18 credit hours

## FOURTH YEAR

First Semester	Hr.	Second Semester	Hr.
Nsg. 275 .....	3	Nsg. 284 .....	3
Nsg. 280 .....	3	Nsg. 285 .....	3
Nsg. 281 .....	1	Nsg. 286 .....	3
Nsg. 282 .....	2	Core A/elective .....	3-6
Nsg. 283 .....	2		
Core A/elective .....	<u>3-6</u>		
	14-17		<hr/> 12-15

## Master of Science in Nursing (M.S.N.)

The School of Nursing offers a program of study leading to the Master of Science in Nursing (M.S.N.) degree.

The program of study is designed to prepare the professional nurse as a nurse clinician who has the necessary knowledge, attitudes and competencies for the advanced practice of nursing in primary health care.

The philosophy and conceptual framework of the School of Nursing provide the frame of reference for the curriculum sequence. Through the core nursing and elective courses, culminating in a final semester of intensive practicum and thesis development, the student builds the theoretical, scientific, and humanistic base for nursing practice in primary health care which involves an integration of research, leadership and education concepts with clinical experiences.

The program allows flexibility within the basic curricular structure through the individualization of learning experiences, electives, thesis, and the opportunity to investigate an area of interest in advanced study. The pattern and duration for the individual student study plan is determined in

consultation with a faculty adviser and is based upon the student's background and goals. The program can be completed in four semesters of full-time study at the main campus in Morgantown. The program is also offered through extension.

### **Admission Procedure**

Applicants wishing to apply to the graduate program in nursing must obtain two application forms from the Office of the Graduate Academic Unit, West Virginia University School of Nursing, 3015 Basic Sciences Building, Morgantown, WV 26506. The application to the graduate program is to be returned to that office. The supplemental application materials for the graduate program in nursing must be returned to the Chairperson, Graduate Academic Unit, School of Nursing, West Virginia University, Morgantown, WV 26506.

### **Admission Requirements**

The applicant must:

1. Meet the admission requirements of the WVU Graduate School.
2. Have completed a baccalaureate program in nursing accredited by the National League for Nursing (NLN). Applicants with a baccalaureate degree from nursing programs without NLN accreditation or non-nursing programs will be considered on an individual basis.
3. Have completed a course in introductory statistics.
4. Provide the following:
  - a. Statement of philosophy of nursing and professional goals.
  - b. A letter of recommendation from each of the following: head of undergraduate nursing school, employer, and a colleague.
  - c. Evidence of a current professional nursing licensure in at least one state.

Preference is given to an applicant with an undergraduate grade-point average of B (3.0) or better. (A=4.0).

When all information has been received, the applicant participates in a personal interview with a graduate faculty member for the purpose of validating admission materials, clarifying admission criteria, projecting a study progression plan, and initial advising. Six parameters are used for review of applicants: (1) academic achievement; (2) residency/employment location; (3) professional experience; (4) biographical goals; (5) ethnicity/multicultural experiences; and (6) recommendations.

The application process should be completed by January 1 for summer (May) enrollment; March 1 and August 1 for fall and spring enrollment, respectively. However, applications are accepted year-round for admission to the program. Class sizes are limited and are based on available faculty resources and space.

### **Degree Requirements**

1. Completion of 42 semester credit hours. Minimum of 33 hours in nursing and 9 hours of non-nursing electives.
2. Completion of a Thesis (6 hours).
3. Achievement of an overall academic average of at least a B in all work attempted in the master's program. A grade of C in two or more nursing courses will require a faculty review of student's program progression.



4. Removal of all conditions, deficiencies, and incomplete grades. Students are expected to register for courses with letter grades (A, B, C). Electives may be opted for Satisfactory (S) or Unsatisfactory (U) grades—subject to the approval of the adviser.

Credit hours for courses in which the grade is lower than C will not count toward satisfying graduate degree requirements.

Students are expected to register for courses with letter grades (A, B, C), with the exception of electives which the student may opt to take with Satisfactory (S) or Unsatisfactory (U) grades, subject to the approval of the adviser.

### M.S.N. Curriculum

<i>Nursing Theory, Practice, and Research (30-33 credits)</i>		<i>Hr.</i>
Nsg. 300—Advanced Nursing in Primary Health Care 1 .....		3
Nsg. 301—Advanced Nursing in Primary Health Care 2 .....		3
Nsg. 302—Advanced Nursing in Primary Health Care 3 .....		3
Nsg. 310—Advanced Nursing Practice 1 .....		3
Nsg. 311—Advanced Nursing Practice 2 .....		3
Nsg. 312—Advanced Nursing Practice 3 .....		3
Nsg. 370—Theories in Nursing .....		3
Nsg. 373—Research Process and Methods in Nursing .....		3
Nsg. 400—Advanced Nursing Practice 4 .....		3
Nsg. 497—Research (Master's Thesis) .....		6
		<b>33</b>

<i>Electives (9-12 credits)</i>	
Cognates (Non-nursing) .....	9
<b>Total .....</b>	<b>42</b>

### A Sample Progression Plan (Full-Time Study)

<i>Semester I</i>	<i>Hr.</i>	<i>Semester II</i>	<i>Hr.</i>	<i>Semester III</i>	<i>Hr.</i>	<i>Semester IV</i>	<i>Hr.</i>
Nsg. 300	3	Nsg. 301	3	Nsg. 302	3	Nsg. 400	3
Nsg. 310	3	Nsg. 311	3	Nsg. 312	3	Nsg. 497	3
Nsg. 370	3	Nsg. 373	3	Nsg. 497	3	Elective	3
		Elective	3	Elective	3		
	9		12		12		9

TOTAL: 42 hours

### Courses of Instruction in Nursing (Nsg.)

#### (For Nursing Majors Only)

75. *Issues of Nursing 1. I, II.* 2 hr. PR: Sophomore standing or consent. Overview of past, present, and future issues of the nursing profession. Emphasizes a historical review of the nursing literature.
80. *Concepts of Nursing 1. I.* 4 hr. PR: Sophomore standing or consent. Conc.: Nsg. 81. Introduces concepts, principles, and theories of nursing practice in relation to the health promotion with individuals and their families. Includes intellectual and interpersonal arts and psychomotor skills basic to nursing practice.
81. *Practicum 1. I.* 2 hr. PR: Sophomore standing or consent. Conc.: Nsg. 80. Selected experiences for the application of the basic concepts necessary for health promotion. Includes experience with individuals of all ages and their families. (Graded as Pass-Fail.)

82. *Concepts of Nursing 2. II. 4 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 83.* Concepts, principles, and theories of nursing practice with individuals experiencing minor deviations from wellness. Includes adapting mechanism necessary to regain health.
83. *Practicum 2. II. 2 hr. PR: Nsg. 80, 81 or consent. Conc.: Nsg. 82.* Selected experiences in which the nurse assists clients to cope with wellness and minor deviations from wellness. Includes experience with individuals of all ages and their families. (Graded as Pass-Fail.)
99. *Basic Concepts of Professional Nursing. I, II, S. 6 hr. PR: Nursing licensure.* Focuses on man (family) related to life cycle, stress adaptation, deviations from wellness. Clinical application of nursing theory stresses interrelatedness of health problems, scientific inquiry, and interpersonal processes. Students are assisted to identify their career goals.
175. *Issues of Nursing 2. I, II. 2 hr. PR: Nsg. 75 or consent.* Issues of nursing practice. Emphasizes related theories and research.
180. *Concepts of Nursing 3. S. 3 hr. PR: Junior standing or consent. Conc.: Nsg. 181.* Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and moderate deviations from wellness. Builds on past intellectual and interpersonal arts and psychomotor skills.
181. *Practicum 3. S. 3 hr. PR: Junior standing or consent. Conc.: Nsg. 180.* Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and moderate deviations from wellness. Includes experience with individuals of all ages. Emphasizes the practice of psychomotor skills. (Graded as Pass-Fail.)
182. *Concepts of Nursing 4. I. 4 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 183.* Concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness.
183. *Practicum 4. I. 4 hr. PR: Nsg. 180, 181 or consent. Conc.: Nsg. 182.* Selected experiences for the application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. (Graded as Pass-Fail.)
184. *Concepts of Nursing 5. II. 4 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 185.* Continuation of concepts, principles, and theories of nursing practice associated with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages.
185. *Practicum 5. II. 4 hr. PR: Nsg. 182, 183 or consent. Conc.: Nsg. 184.* Selected experiences for application of concepts of nursing practice with individuals and families experiencing acute health care needs and major deviations from wellness. Includes experience with individuals of all ages. Emphasizes nursing care problems of increased complexity. (Graded as Pass-Fail.)
275. *Issues of Nursing 3. I. 3 hr. PR: Senior standing or consent.* Analysis of professional nursing issues as they relate to a personal and professional philosophy of nursing.
280. *Concepts of Nursing 6. I. 3 hr. PR: Nsg. 180, 182, 184 or consent. Conc.: Nsg. 281.* Concepts, principles, and theories of professional nursing practice associated with individuals and/or families who are experiencing a critical, isolated health problem. Includes individuals of all ages. Introduces specialized psychomotor skills.
281. *Practicum 6. I. 1 hr. PR: Senior standing or consent. Conc.: Nsg. 280.* Selected experiences for the application of concepts of nursing practice with individuals and/or families experiencing a critical, isolated health problem. Includes experience with individuals of all ages. Emphasizes the practice of specialized psychomotor skills. (Graded as Pass-Fail.)

282. *Concepts of Nursing 7. I. 2 hr. PR: Senior standing or consent. Conc.: Nsg. 283.* Concepts, principles, and theories of professional nursing practice associated with individuals and/or families within the health care delivery system. Includes individuals of all ages.
283. *Practicum 7. I. 2 hr. PR: Senior standing or consent. Conc.: Nsg. 282.* Selected experiences in the application of concepts of nursing practice with individuals and/or families within the health care delivery system. Emphasizes a comprehensive study of a health concern in a defined population. (Graded as Pass-Fail.)
284. *Concepts of Nursing 8. II. 3 hr. Conc.: Nsg. 285, 286.* Examines concepts influencing the professional nursing role within health-care delivery systems with emphasis on the synthesis of one's personal and professional philosophy of nursing.
285. *Practicum 8. II. 3 hr. Conc.: Nsg. 284.* Selected experiences in the practice of professional nursing in primary and secondary settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (Graded as Pass-Fail.).
286. *Practicum 9. II. 3 hr. Conc.: Nsg. 284.* Selected experiences in the practice of professional nursing in acute or critical-care settings. Focus is on the incorporation of processes in the care of clients and the analysis of health care. (Graded as Pass-Fail.).
300. *Nursing in Primary Health Care 1. I. 3 hr. PR or Conc.: Nsg. 370.* Analysis and synthesis of concepts in nursing and related sciences relevant to the development of a conceptual framework for nursing in primary health care.
301. *Nursing in Primary Health Care 2. II. 3 hr. PR: Nsg. 310.* Development of a conceptual model for nursing with emphasis on developing strategies to promote client health.
302. *Nursing in Primary Health Care 3. I. 3 hr. PR: Nsg. 311.* Further development and/or refinement of the conceptual model for nursing with specific emphasis on planned change strategies and how these strategies impact health.
310. *Advanced Nursing Practice 1. I. 3 hr. Conc.: Nsg. 300.* Advanced nursing practice focusing on applicability of concepts in students' developing conceptual framework.
311. *Advanced Nursing Practice 2. II. S. 3 hr. Conc.: Nsg. 301.* Advanced nursing practice focusing on development and application of nursing strategies within students' conceptual model.
312. *Advanced Nursing Practice 3. I, S. 3 hr. Conc.: Nsg. 302.* Advanced nursing practice focusing on application and testing of students' conceptual model, identification of a health problem area within the practice setting, and preparation of a planned change strategy.
370. *Theories in Nursing. I, S. 3 hr. PR: Graduate standing; consent.* Introduction to the structure and function of extant theories in nursing as a basis for developing a conceptual framework for nursing.
373. *Research Process and Methods in Nursing. II, S. 3 hr. PR: Nsg. 310, 370.* Study of the research process and methods for incorporation into students' conceptual model, practice and research in nursing.
400. *Advanced Nursing Practice 4. I, II. 3 hr. PR: Nsg. 312.* Collaborative practice focusing on the evaluation and modification of students' conceptual model for nursing and implementation of a planned change strategy.
491. *Advanced Study. I, II. 1-3 hr. PR: Graduate standing; consent.* In-depth study of topics related to current issues in primary health care. Study may be independent or through specially scheduled seminars.
497. *Research. I, II, S. 6 hr. PR: Nsg. 373; PR or Conc.: Nsg. 312; consent.* Refinement and implementation of research proposal to meet requirements for the master's thesis.

# School of Pharmacy

Pharmacy was first offered at West Virginia University as a department in the School of Medicine, beginning in 1914. It was changed to the College of Pharmacy in 1936 and to the School of Pharmacy in 1958. In 1960, the School of Pharmacy changed from a four-year to a five-year program—including two years of pre-pharmacy.

The objective of the School of Pharmacy is to educate practitioners for current and future roles in the profession of pharmacy.

The pharmacy curriculum consists of three years of professional study preceded by a minimum of two years of study in an accredited college of arts and sciences.

The curriculum is designed to provide the student with the scientific and technical knowledge and communication skills required to practice the profession and to inculcate in the student a concept of the pharmacist's professional responsibilities as a health science practitioner and as a guardian of the public health.

Most pharmacy graduates enter practice in community or institutional pharmacies; however, many positions are also available in various government agencies, professional organizations, and industry. Pharmacists are eligible for commissions in the armed forces and the U.S. Public Health Service.

Graduates also may prepare for careers in teaching and research by entering graduate schools for specialization in pharmacy, pharmaceuticals, pharmacognosy, pharmaceutical chemistry, pharmacy administration, and pharmacology and toxicology. The pharmaceutical industry provides opportunities in a variety of capacities in promotion, distribution, production, and research.

## Accreditation

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education. The council is composed of members from American Pharmaceutical Association, National Association of Boards of Pharmacy, American Association of Colleges of Pharmacy, and American Council on Education.

The School of Pharmacy holds membership in the American Association of Colleges of Pharmacy whose objective is to promote the interests of pharmaceutical education. All institutional members must maintain certain requirements for entrance and graduation.

## Legal Requirements and Reciprocity

To qualify for examination for licensure by the West Virginia Board of Pharmacy, the applicant must be a citizen, not less than 21 years of age, and of good moral character. Further, the applicant must be a graduate of an accredited school of pharmacy, and must meet the internship requirements set by the West Virginia Board of Pharmacy.

Interns must be registered with the West Virginia Board of Pharmacy and must be enrolled in or a graduate of an accredited school of pharmacy to gain experience acceptable for the internship requirement. Details may be obtained from the Office of the Dean.

School of Pharmacy graduates are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia Board of Pharmacy examination are privileged to reciprocate, without further



examination, with forty-seven other states, and with the District of Columbia and Puerto Rico, provided they meet the requirements of these states.

## Admission

All students seeking enrollment in the School of Pharmacy must comply with regulations appearing in this and the WVU *Undergraduate Catalog*.

Students preparing for the study of pharmacy may satisfy the course work requirements for entrance into the School of Pharmacy by majoring in any arts and sciences subject and including in their course selections the following, or their equivalents:

English Composition .....	6 hr.	Chemistry, General .....	8 hr.
College Algebra .....	3 hr.	Chemistry, Organic .....	8 hr.
Trigonometry .....	3 hr.	Physics .....	8 hr.
Principles of Economics .....	6 hr.	Electives* .....	18 hr.
Biology, General .....	8 hr.		
		TOTAL .....	68 hr.

\*Electives must be designed to satisfy University Core Curriculum requirements. Electives: Core Group A—12 hr.; Core Group B—6 hr.

University Core Curriculum Group A includes: Art, English (exclusive of English 1 and 2), Humanities, Languages, Music, Philosophy, Religious Studies, Selected Multidisciplinary Studies, Speech Communication, and Theatre.

University Core Curriculum Group B includes: Education Foundations 1, Forestry 140, Geography, History, Mineral and Energy Resources 97, Political Science, Psychology, Selected Multidisciplinary Studies, Social Science, Sociology and Anthropology, Technology Education 280, 281, and Economics (for Pharmacy students, Group B Economics would include economics electives beyond the 6-hr. required courses).

*Because limited openings are available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession.*

Admissions are competitive and are based on cumulative academic average and science average achieved in all prior college courses, a personal interview, recommendations, and results of the Pharmacy College Admission Test (PCAT).

For admission to the School of Pharmacy, formal application should be made to the Committee on Admissions of the School of Pharmacy as early as possible after January 1, but by April 1, preceding the fall term (first semester) in which the student is seeking enrollment. Formal applications received after the April 1 deadline will be considered only when vacancies exist.

Applicants should write to Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506, which will furnish official blanks on which formal application must be made.

A \$10.00 application fee is required and must accompany the application.

Each applicant who is recommended for acceptance is expected to deposit \$50.00 before the applicant's name is entered upon the official list of those accepted by the School of Pharmacy. If the applicant enrolls, this sum is applied to the first-semester tuition. If the applicant fails to enroll, this deposit is forfeited.

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

Complete information may be obtained from the Dean of the School of Pharmacy, or from the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506.

## **Pharmacy College Admission Test**

Completion of the Pharmacy College Admission Test is a requirement for admission. It is strongly recommended that the student take this test in the fall before making application for admission. Information concerning time and place of the test can be obtained from a pre-pharmacy adviser, or by writing: Pharmacy College Admission Test, The Psychological Corporation, 304 East 45th St., New York, NY 10017.

## **Personal Interview**

A personal interview with the Committee on Admissions will be required. Interviews will be held at the WVU Medical Center and will be arranged as far as possible to suit the convenience of the applicant. Interviews are scheduled during February, March, and April. Only applicants with a cumulative and science average of 2.5 or above will be called for an interview, unless openings are available.

## **Admission to Advanced Standing**

If space is available, students from other accredited schools of pharmacy may be admitted provided they meet the course requirements of the WVU School of Pharmacy, have a 2.5 grade-point average, and are eligible for readmission for the degree in pharmacy in the school previously attended. D grades in professional courses will not be transferred.

## **Student Status and Advancement**

The determination of student status is in the hands of the Committee on Academic Standards of the School of Pharmacy. All committee actions are subject to approval of the Dean. In the School of Pharmacy, all grades except W, WU, P, and X are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance, as well as the completion of course requirements.

To be in good standing, a student must maintain at least a 2.0 cumulative average in professional subjects. An F grade or failure to attain a 2.0 average in any semester will result in placing a student on probation. To be removed from probation, a student shall: (a) remove all academic deficiencies; (b) attain not less than a 2.0 cumulative grade-point average; and (c) demonstrate significant improvement in academic performance earning a C grade or better in all course work prescribed by the Committee on Academic Standards. Failure to be removed from probation in the subsequent semester may be deemed sufficient reason for suspension or the withdrawing of advancement. Furthermore, any student on probation at the end of the second professional year must petition the Committee on Academic Standards for advancement to the third professional year. Any student on probation at the beginning of the second semester second professional year, or who qualifies for probation at the end of that semester, shall not be eligible for summer clerkships.

Any first-professional-year student deficient 7 or more grade points shall fail promotion and shall repeat the year. Any second-professional-year student deficient 4 or more grade points shall fail promotion and shall repeat the year. Any student deficient 12 or more grade points, or who fails promotion a second time, shall be suspended.

Students on probation are not eligible to hold office in student organizations or to participate in activities which make demands on time

necessary to maintain satisfactory academic performance. Students are expected to be present for all of their classes and laboratories. Full-time students in the School of Pharmacy may not register for less than 14 hours nor more than 20 hours during any semester without the approval of the Committee on Academic Standards.

### **Special Requirements**

All students satisfactorily completing the second professional year must obtain professional liability insurance before being allowed to begin the third professional year. Professional liability insurance will be continuously maintained in effect through completion of the third professional year. Failure to have the liability insurance will result in the student's not being allowed to enroll in required courses.

Students in the first professional year will be required to obtain an Intern Certificate from the West Virginia Board of Pharmacy, and to maintain it through completion of the third professional year.

During the second professional year, students will be informed of their assigned schedules for the third professional year's required clinical clerkships. Students will also be informed as to the West Virginia community or communities in which they will reside during these clerkships, the names of their preceptors, and the dates of attendance. The School of Pharmacy will provide the student opportunity to participate in choice of assignments, but it reserves ultimate responsibility in making such assignments. Each student will be expected to bear any financial burdens (i.e., living, moving, travel, etc.) incurred in satisfying clerkship requirements. A maximum of 24 students will be assigned to the clerkship session during any term (e.g., summer, fall, or spring). Only 8 students will be assigned to each required clerkship during any given four-week period. In the event of over-subscription to any clerkship period or clerkship rotation, priority will be assigned on the basis of grade-point average attained while a full-time student in the School of Pharmacy.

### **Requirements for Degree**

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of WVU concerning degrees, satisfies all entrance and School of Pharmacy requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of C (2.0) for all work in the professional curriculum.

### **Course Changes**

A student who desires to obtain credit for a course in place of any course prescribed in the student's curriculum must obtain permission of such change from the Dean.

# Curriculum

## SCHOOL OF PHARMACY CURRICULUM PLAN

### First Professional Year

First Semester	Hr.	Second Semester	Hr.
Bioch. 139—Gen. Biochem. ....	4	M. Bio. 220—Microbiology ....	4
Anat. 101—Hum. Anat. ....	3	Phar. 204—Concepts. Phar. 3 ....	4
Physi. 241—Mech. Body Funct. ....	4	Phar. 207—Intro. to Drug Lit. ....	1
Phar. 200—Prep. Phar. Pract. ....	2	Phar. 228—Phar. Pract. Leg. Env. ....	4
Phar. 201—Concepts Phar. 1 ....	4	Phar. 241—Fund. Pathophys. ....	3
Phar. 227—Phar. Soc. Env. ....	2	Phar. 270—Fund. Med. Chem. 1 ....	3
	19		19

### Second Professional Year

First Semester	Hr.	Second Semester	Hr.
Pcol. 243—Pharmacology ....	4	Phar. 205—Phar. Pract. ....	4
Phar. 203—Concepts Phar. 2 ....	4	Phar. 230—Prof. Asp. Phar. ....	3
Phar. 207—Intro. to Drug Lit. ....	1	Phar. 243—Chem. Immu. Agts. ....	3
Phar. 229—Man, Asp. Phar. Pract. ....	3	Phar. 246—Pharmacotherapeutics 2 ..	2
Phar. 245—Pharmacotherapeutics 1 ..	3	Phar. 260—Princ. Med. ....	2
Phar. 271—Fund. Med. Chem. 2 ....	2	Electives .....	1-4
Electives .....	1-3		
	17-19		16-19

### Third Professional Year

First Session (Summer)	Hr.	Second Session (First Sem.)	Hr.
Phar. 250—Amb. Care Clerkship ....	4	Phar. 250, 251, 252, and 253	
Phar. 251—Med. Team Clerkship ....	4	(See First Session) .....	16
Phar. 252—Inst. Care Clerkship ....	4	or	
Phar. 253—Elect. Clerkship ....	4	Electives .....	16
	16	or	
		Free Session	
or			
Free Session			

Third Session (Second Sem.)	Hr.
Phar. 250, 251, 252, and 253 .....	16
or	
Electives .....	16
or	
Free Session	

# Graduate Programs

## Pharmaceutical Sciences

The School of Pharmacy offers graduate programs in the pharmaceutical sciences aimed at educating competent researchers and teachers. Programs for the degree of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) provide flexible, research-oriented curricula designed to develop the interests, capabilities, and potential of the individual student.

## Admission

Applicants for admission must satisfy the general requirements for admission as graduate students. The applicant must possess a baccalaureate degree with a background in a suitable area of study, an overall grade-point



average of at least 2.75, and the aptitude and interest for graduate work in the pharmaceutical sciences in order to be admitted with regular student status. Applicants not meeting criteria for admission with regular student status will be considered for admission under alternate admission classifications as explained in Part 2 of the *Graduate Catalog*. In addition, graduate record examination scores in the verbal, quantitative, and analytical portions of the examinations are required from all students, and TOEFL, or similar scores, are required of foreign students.

### **Academic Standards**

No credits are acceptable toward a graduate degree with a grade lower than a C.

The graduate student must have a cumulative grade-point average of at least 3.0 in all graduate courses to qualify for the degrees.

### **Master of Science (M.S.)**

The School of Pharmacy offers programs of graduate study leading to the degree of Master of Science (M.S.) in the pharmaceutical sciences. Students may specialize in pharmacy administration, pharmacology and toxicology, pharmacognosy, pharmaceutical chemistry, industrial pharmacy, medicinal chemistry, pharmaceuticals, biopharmaceuticals, and pharmacokinetics.

#### **Requirements for M.S. Degree**

To be eligible for the M.S. degree, the student must complete a minimum of 30 hours of graduate credit, of which no more than 6 hours may be for research and thesis.

Upon completion of the course work and research requirements, and after submission of the thesis, an oral examination will be administered by the appointed examination committee.

### **Doctor of Philosophy (Ph.D.)**

The School of Pharmacy offers programs of study leading to the Doctor of Philosophy (Ph.D.) degree in the pharmaceutical sciences. Specialty areas of study include medicinal chemistry, pharmaceuticals/biopharmaceuticals/pharmacokinetics, and behavioral and administrative pharmacy.

#### **Requirements for Ph.D. Degree**

The student's first semester is usually occupied with course work while he or she is under the guidance of an assigned interim committee. During this time, each student will confer with several faculty members concerning the research project, and a major professor should be chosen by the end of the first semester of graduate study. The student's research committee should be chosen by the end of the first year of study (18-20 hours of graduate course work). The interest to pursue the M.S. en route to the Ph.D. degree should also be stated at this time. It is not necessary for all students to complete all requirements for the M.S. degree in order to qualify for admission into the Ph.D. program, although the student, with committee advice, may elect to complete the requirements for this degree in progress toward the Ph.D. Students bypassing the M.S. must meet all requirements for the M.S., except for preparing and defending a thesis.

A formal plan of study and research plan must be submitted by the student, the major professor, and the research committee.

Progress will continue with guidance from the research committee, and by the end of the second year the student should have completed the language/research tool requirements.

To be admitted for candidacy for the Ph.D. degree, the student must satisfy the above requirements and pass oral and written qualifying examinations.

After admission to candidacy, a substantial part of the program is devoted to an original research project which culminates in a dissertation. To be recommended for the Ph.D., the dissertation must be satisfactorily completed and defended at an oral examination.

## Courses of Instruction in Pharmacy

Professors Baldwin, Brister, Lim, C. Malanga, Mauger, O'Connell, Rosenbluth, and Wojcik; Associate Professors Covington, Howard, Hoy, Jacknowitz, Ma, R. Miller, O'Donnell, Proveaux, Riley, and Stratford; Assistant Professors Abate, M. Davis, Gross, Gwilt, Ponte, Schulz, and Stevenson; Instructor Anido; Lecturers Gill and Sensabaugh; Adjunct Associate Professor Glover; Adjunct Assistant Professors Cunningham, Harper, Richardson, and Swisher; Clinical Associate Professor Lowe; Clinical Assistant Professors Hilligoss, McNeil, Midcap, Miles, and Prettyman; Clinical Instructors Alderman, Anderson, Anile, Bailey, Bartsch, J. Bovenizer, N. Bovenizer, Calemine, Capito, Caplan, Carter, Coleman, Corkrean, Crawford, Criss, R. Davis, Day, DeBone, Doyle, Flanagan, Fruth, Gastineau, Gianettino, Goodykoontz, Grabowski, Grant, Griffith, Griffiths, Grysekevich, Hickman, Holmes, Jarvis, Johnson, Johnston, Jones, Lang, Law, Lindsay, Logan, Lusk, M. Malanga, Martin, Matheny, Meredith, J. Miller, Muha, Orlando, Ott, Pawlak, Phillips, Pierce, Plummer, Plyburn, Ridgway, Ritchie, Robinson, Scott, Scrivo, Shallis, Shaw, Slaven, Stanley, Stout, Taylor, Toompas, VanMeter, Weaver, Winters, Zicafoose, and Ziolkowski.

## Pharmacy (Phar.)

200. *Preparation for Pharmacy Practice*. I. 2 hr. PR: First-year pharmacy student or consent. A study of pharmaceutical calculations, pharmaceutical literature, and an overview of pharmacy practice.
201. *Concepts in Pharmaceutics 1*. I. 4 hr. PR: First-year pharmacy student or consent. A discussion of introductory material in the practice of pharmacy and a discussion of the concepts underlying solution dosage forms.
203. *Concepts in Pharmaceutics 2*. I. 4 hr. PR: Phar. 201. Basic principles of formulation, *in vitro* evaluation and bioavailability implications of pharmaceutical dosage forms represented by solids and polyphasic systems. Includes small- and large-scale processing of tablets, capsules, suspensions, emulsions and suppositories.
204. *Concepts in Pharmaceutics 3*. II. 4 hr. Special dosage forms, quality control, and drug dosage regimens of pharmaceutical formulations and their conformity with F.D.A. regulations and good manufacturing practices.
205. *Pharmacy Practice*. II. 4 hr. PR: Second-year standing in pharmacy or consent. Development of professional competence in the practice of pharmacy. Scientific principles underlying extemporaneous prescription compounding are applied to prescription problems. Problems arising in the dispensing of precompounded pharmaceuticals are studied.
207. *Introduction to Drug Literature*. II. 1 hr. PR: Second-year pharmacy student or consent. To acquaint the student with the reference sources available to meet the drug information needs of pharmacists in the many different aspects of pharmacy practice, as well as those needed by other health practitioners.
211. *Sterile Products*. I, II. 3 hr. PR: Third-year standing in pharmacy. Broad view of the technology involved in sterilization and in the preparation and administration of sterile dosage forms. 2 hr. lec., 3 hr. lab.

212. *Non-Prescription Drugs*. I. 3 hr. PR: Second-year standing in pharmacy. Basis for self-medication, the therapeutic rationale for non-prescription drugs, and ethical principles as they apply to non-prescription drugs and appliances.
213. *Industrial Pharmacy*. I. 4 hr. PR: Phar. 204. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
214. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
215. *Physical Pharmacy*. II. 3 hr. PR: First-year standing in pharmacy or consent. Designed to illustrate the special application of physiochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
216. *Hospital Pharmacy and Administration*. I. 3 hr. PR: Enrollment in the School of Pharmacy and consent. Basic concepts of the organization, management, and services of hospitals and pharmacist's role in the modern hospital. Emphasis on principles of hospital pharmacy administration and practice.
227. *The Pharmacist's Social Environment*. I. 2 hr. External factors which influence the practice of the pharmacist over which the pharmacist has little or no control, with emphasis on the psychosocial aspects and distributive systems.
228. *Pharmacy Practice and Legal Environment*. II. 4 hr. PR: Phar. 227 or consent. Continuation of Phar. 227 with emphasis on legal and health care delivery systems.
229. *Managerial Aspects of Pharmacy Practice*. I. 3 hr. PR: Phar. 227 and 228 or consent. Emphasis on decision making, planning, organization, personnel, information systems, risk factors, and financial aspects.
230. *Professional Aspects of Pharmacy Practice*. II. 3 hr. Emphasis on inventory control, pricing, communications, patient profiles and charges, and present and future role of pharmacist.
231. *The Pharmacist Proprietor*. I. 3 hr. PR: Senior standing in pharmacy. Pharmacist as a business owner; management theories and principles applied to the efficient operation of pharmacy.
232. *Social Aspects of Pharmacy*. II. 3 hr. Psychosocial aspects of pharmacists and patients in health care setting. Behavioral science factors which affect whether, why, or how medications and pharmaceutical services are used; role of pharmacist in health care.
233. *Current Developments in Pharmacy Practice*. II. 3 hr. PR: Third-professional-year standing, or second-professional-year by consent. Examines issues of current importance to contemporary pharmacy practice such as prepaid health insurance, peer standards review and organizations, degree and title granting, competency based relicensure and continuing education, and technicians' roles.
241. *Fundamentals of Pathophysiology*. II. 3 hr. PR: First-year standing in pharmacy or consent. Student is introduced to various disease states with emphasis on the pathophysiology underlying those diseases amenable to drug therapy.
243. *Chemotherapeutic and Immunobiologic Agents*. II. 3 hr. PR: Consent or second-year standing in pharmacy. Bacterial, viral, and parasitic infections; immunobiological methods of prevention, modification, and treatment; chemotherapeutic agents used in treatment; therapeutics and management.
245. *Pharmacotherapeutics 1*. I. 3 hr. PR: Second-year standing in pharmacy or consent. The application of pharmacodynamic, pharmacokinetic, and pharmaceutical principles in the treatment, diagnosis, and prevention of disease states.



246. *Pharmacotherapeutics 2*. II. 3 hr. PR: Phar. 245 or consent. A continuation of Phar. 245 in the application of pharmacodynamic, pharmacokinetic, and pharmaceutical principles in the treatment, diagnosis, and prevention of disease states.
249. *Drugs and Medicines*. I. 3 hr. (Not intended for pharmacy majors.) PR: General biology or consent. Physiology and organic chemistry suggested. A course intended to introduce the nonhealth professional student to information about drugs and pharmaceutical preparations to include their source, administration, action, use and abuse.
250. *Ambulatory Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. A course giving extensive experience in the practice of pharmacy, emphasizing the pharmacist's relationship to ambulatory patients.
251. *Medical Team Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will participate on a health care team in an inpatient setting. Emphasis will be on pharmaceutical and drug advising, role of drug therapies in patient care, patient drug histories, and practitioner-patient communications.
252. *Institutional Care Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Extensive experience will be gained in the practice of pharmacy in institutional centers with emphasis on the pharmacist's relationship with institutional patients.
253. *Elective Clerkship*. I, II, S. 4 hr. PR: Third-professional-year standing. Students will elect to repeat a clerkship (Phar. 250, 251, 252). Emphasis will be on the further development of skills in the practice of pharmacy.
256. *Therapeutics*. I. 3 hr. PR: Phar. 244 or equiv., and consent. A discussion and integration of pharmacological-therapeutic concepts in the study of problems which may be encountered by the pharmacist in drug management of selected disease states.
260. *Principles of Medicine*. II. 2 hr. Those diseases about which the pharmacist should have sufficient knowledge for intelligent communication with the physician.
270. *Fundamentals of Medicinal Chemistry 1*. II. 3 hr. PR: First-year standing in pharmacy or consent. A relationship of the chemistry, structure, and physicochemical properties of drugs to their pharmacodynamic effects. Major portion devoted to basic principles followed by discussion in pharmacological classes.
271. *Fundamentals of Medicinal Chemistry 2*. I. 2 hr. PR: Phar. 270. Continuation of Phar. 270.
272. *Medicinal Chemistry*. II. 3 hr. PR: Consent.
276. *Pharmaceutical Quality Control*. I. 3 hr. PR: Second-year standing in pharmacy. Basic scientific principles in quality control of drugs and dosage forms, with particular attention to newer analytical techniques.
283. *History of Pharmacy*. I or II. 2 hr. Gives the student a deeper appreciation of the background of pharmacy and its development from ancient times to present. (Course will not be offered in 1983-84.)
284. *Public Health*. I or II. 2 hr. Measures required for the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies. (Course will not be offered in 1983-84.)
285. *Radiopharmacy*. I. 3 hr. PR: Second-year standing in pharmacy or consent. Production and properties of radiation; detection of radiation; nuclear medicine instrumentation; the formulation, production, quality control, and use of radioactive materials and radiopharmaceuticals used in diagnosis and treatment.
287. *Seminar in Pharmaceutical Sciences*. I, II. 1-3 hr. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.
289. *Pharmaceutical Investigations*. I, II, S 1-3 hr. PR: Consent. Original investigation in pharmaceutics, medicinal chemistry, pharmacognosy, or pharmacy.



290. *Special Topics*. I, II. 1-4 hr.
298. *Clinical Pharmacy Specialties*. I, II, S. 3 hr. PR: Phar. 250, 251, 252, 253, and consent. Clinical pharmacy elective rotation on a selected medical specialty service. Rotations will be arranged upon approval by clinical pharmacy instructor and respective medical chiefs.
300. *Industrial Pharmacy*. I. 4 hr. Major aspects and principles of dosage form development and manufacture. Structure of industry and government influences. Laboratory experiences in manufacturing and development techniques.
301. *Advanced Biopharmaceutics*. I or II. 3 hr. Concepts of biopharmaceutics and pharmacokinetics in relation to the design and evaluation of dosage forms and determination of rational dosage regimens in health and disease.
314. *Cosmetic Formulation*. II. 3 hr. PR: Phar. 203. Introduction to principles and basic considerations of cosmetic formulations, including review of anatomy/physiology of skin. Laboratory exposes students to practical aspects of processing the most popular cosmetic products.
315. *Physical Pharmacy*. I or II. 3 hr. Designed to illustrate the special application of physicochemical properties of materials to pharmaceutical and physiological systems. Especially useful in delineating formulation considerations impinging upon the stability of complex systems.
370. *The Synthesis of Drugs*. I, II, S. 3 hr. PR: Chem. 332 and consent. A survey of the approaches employed in the synthesis of a variety of examples of pharmacologically useful agents. Emphasis is placed on retrosynthetic analysis of target molecules and the application of synthetic procedures to multistep syntheses.
390. *Special Topics*. I, II, S. 1-4 hr.
391. *Seminar in Pharmaceutical Sciences*. I, II. 1 hr. PR: Consent. A multidisciplinary weekly presentation and discussion of special topics and research in the pharmaceutical sciences. (Weekly attendance is required and grading is on an S/U basis only.)
396. *Special Problems in Pharmaceutical Sciences*. I, II, S. 1-3 hr. Where special interest is shown by the student in an area other than of the student's thesis research, a faculty member will supervise individual study and research.
491. *Advanced Study*. I, II, S. 1-6 hr. PR: Consent. Investigation in advanced subjects which are not covered in regularly scheduled courses. Study may be independent or through specially scheduled lectures.
494. *Special Seminars*. I, II, S. 1-6 hr. Special seminars arranged for advanced graduate students.
496. *Graduate Seminar*. I, II. 1 hr. PR: Consent. Formal presentation by graduate students to assembled graduate faculty and students of research or special topics approved by adviser. Title to be presented at start of semester. Required at least once annually. (Grading is S/U.)
497. *Research*. I, II. 1-15 hr.
498. *Thesis*. I, II, S. 2-4 hr. PR: Consent.

## **Pharmaceutical Chemistry (Ph. Ch.)**

375. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Spectroscopic methods of analysis with emphasis on their applications in pharmaceutical problems and in biological sciences.
376. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Continuation of Ph. Ch. 375, with emphasis on electro-analytical methods and preparation of samples from pharmaceutical dosage forms and from biological materials.
377. *Advanced Pharmaceutical Analysis*. I or II. 3 hr. Physical-chemical principles involved in methods development. A special problem is assigned as an integral part of the course.

## Pharmaceutics (Pceut.)

302. *Advanced Pharmaceutics*. I or II. 3 hr. Physiochemical and biopharmaceutical principles involved in disperse systems (liquid, semi-solid, and solid) which function as dosage forms. Considerations of properties of solid dispersions, micromeritics, diffusion of liquid dispersions, interfacial phenomena, emulsification, suspensions, prolonged action medication, etc.

## Pharmacognosy (Pcog.)

340. *Organic Plant Constituents*. I or II. 3 hr. Occurrence, properties, biogenesis, etc., of a number of classes of organic compounds derived from plants. Emphasis on secondary metabolites which contain products of pharmaceutical or medicinal interest. (Course will not be offered in 1983-84.)
341. *Isolation of Plant Constituents*. I or II. 3-5 hr. Acquaints the student with techniques used in extraction, separation, and isolation of plant constituents. (Course will not be offered in 1983-84.)

## Pharmacy Administration (Phar. Ad.)

320. *Drug Relation and Control*. I or II. 3 hr. Legislation affecting the development, introduction, control, and utilization of drugs in the American economy.
321. *Drug Distribution Systems*. I or II. 3 hr. Detailed study and analysis of drug distribution in institutional environments.
323. *Economics of the Pharmaceutical Industry*. I or II. 3 hr. History, background, and formation of major drug industries. Oligopolistic practices, mergers, combines, costs of research, and production.

## Faculty and Staff

E. Gordon Gee, Ed.D., J.D., *President*.  
William E. Collins, Ph.D., *Vice-President for Academic Affairs and Research*.  
Herman Mertins, Jr., Ph.D., *Vice-President for Administration and Finance*.  
George D. Taylor, Ed.D., *Vice-President for Student Affairs*.  
Ben J. Tuchi, Ph.D., *Chief Financial Officer*.  
John W. Fisher, II, J.D., *Executive Officer*.

## Medical Center

*Charleston Division*, Thomas W. Mou, M.D., *Dean*.  
*Dentistry*, W. Robert Biddington, D.D.S., *Dean*.  
*Medicine*, Richard A. DeVaul, M.D., *Dean*.  
*Nursing*, Lorita D. Jenab, Ed.D., *Dean*.  
*Pharmacy*, Sidney A. Rosenbluth, Ph.D., *Dean*.  
*University Hospital*, David J. Fine, M.H.A., *Administrator*.

## School of Dentistry

John D. Adams, D.D.S. (U. Pitt), *Professor Emeritus of Fixed Prosthodontics*.  
Camillo A. Alberico, D.D.S. (Marquette U.), *Assistant Dean; Professor of Endodontics*.  
Lester H. Bakos, D.D.S. (WVU), *Associate Professor of Hospital Dentistry*.  
Frank S. Balaban, D.D.S. (WVU), *Associate Professor of Endodontics*.  
Jack H. Baur, Jr., D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Endodontics*.  
Arthur J. Beaumont, Jr., D.D.S. (WVU), *Instructor in Prosthodontics*.  
William P. Bennett, D.D.S. (WVU), *Clinical Instructor (part-time) in Operative Dentistry*.  
Henry J. Bianco, Jr., D.D.S. (U. Md.), *Professor and Chairperson of Prosthodontics*.  
W. Robert Biddington, D.D.S. (U. Md.), *Dean; Professor of Endodontics*.

Byron H. Black, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry, Charleston Division.

Joseph J. Bonnell, D.D.S. (U. Pitt), Clinical Associate Professor (part-time) of Orthodontics.

Jerry E. Bouquot, D.D.S. (U. Minn.), Associate Professor and Chairperson of Oral Pathology.

Dale C. Bowers, D.D.S. (Ohio St. U.), Associate Professor of Oral Diagnosis and Radiology.

Kirkland Brace, D.D.S. (Georgetown U.), Clinical Instructor in Hospital Dentistry.

James L. Bramble, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Prosthodontics.

Stephen Broughton, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

Thomas C. Cady, LL.M. (U. Tex.), Lecturer (part-time) in Dental Jurisprudence.

Anthony L. Camele, D.D.S. (WVU), Clinical Instructor (part-time) in Prosthodontics.

John L. Campbell, D.D.S. (Ind. U.), Professor Emeritus of Oral Surgery.

Minter L. Chapman, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.

Wayne G. Christian, D.D.S. (WVU), Clinical Associate Professor of Endodontics, Charleston Division.

Damon E. Coffman, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.

Myles I. Cogan, D.D.S. (U. Tex.), Clinical Associate Professor of Hospital Dentistry.

Robert J. Conner, Jr., D.D.S. (WVU), Associate Professor of Fixed Prosthodontics.

H. Lee Courtney, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.

Richard J. Crout, D.M.D. (U. Pitt), Associate Professor of Periodontics.

Rose Marie G. Crystal, B.S. (Columbia U.), Associate Professor of Dental Hygiene.

Donald Davidson, D.D.S. (U. Buffalo), Clinical Associate Professor (part-time) of Oral Surgery.

Christina DeBiase, M.A. (WVU), Assistant Professor of Dental Hygiene.

Leo F. DeCounter, D.D.S. (U. Iowa), Professor of Removable Prosthodontics.

John Dempsey, D.D.S. (U. Md.), Clinical Assistant Professor (part-time) of Orthodontics.

Gerald Dice, D.D.S. (Ohio St. U.), Clinical Assistant Professor of Community Dentistry.

Peter H. Fagan, D.D.S. (Loyola U., Chi.), Clinical Instructor in Hospital Dentistry.

Frederick P. Farris, D.D.S., (U. Md.), Clinical Instructor in Hospital Dentistry.

Sanford J. Fenton, D.D.S. (NYU), Associate Professor of Pediatric Dentistry.

David C. Fogarty, D.D.S. (WVU), Clinical Associate Professor (part-time) of Oral Surgery.

James R. Foor, D.D.S. (WVU), Associate Professor of Operative Dentistry.

Pete G. Fotos, D.D.S. (WVU), Assistant Professor of Oral Diagnosis and Radiology.

John W. Frye, D.D.S. (WVU), Clinical Associate Professor (part-time) of Operative Dentistry.

Calvin J. Gaver, D.D.S. (U. Md.), Professor of Operative Dentistry.

Lewis Gilbert, D.D.S. (WVU), Clinical Assistant Professor of Oral Surgery.

Stephen C. Gladwin III, D.D.S. (Ohio St. U.), Assistant Professor of Operative Dentistry.

William L. Graham, D.D.S. (U. Md.), Assistant Dean; Professor and Chairperson of Oral Diagnosis and Radiology.

Catherine E. Graves, M.A. (WVU), Associate Professor of Dental Hygiene.

Robert W. Graves, D.D.S. (WVU), Professor and Chairperson of Oral Surgery.

James A. Griffin, D.D.S. (Baylor U.), Professor of Endodontics.

Antoinette E. Guy, D.D.S. (WVU), Clinical Instructor in Community Dentistry.

Geoffrey A. Gwynn, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Pediatric Dentistry.

James D. Haddox, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.

John B. Haley, Jr., D.D.S. (WVU), Clinical Assistant Professor of Oral Surgery.

Joseph D. Hancock, D.D.S. (WVU), Clinical Instructor in Hospital Dentistry.

George W. Harper, D.D.S. (WVU), Assistant Professor of Removable Prosthodontics.

Richard I. Hart, D.D.S. (U. Mich.), Associate Professor of Operative Dentistry.

David M. Hickman, D.D.S. (WVU), Assistant Professor of Dental Practice Management.

Robert H. Hornbrook, D.D.S. (WVU), Clinical Associate Professor (part-time) of Periodontics.

Michael K. Hurst, D.D.S. (WVU), Clinical Assistant Professor of Periodontics.

Jack G. Hutton, Jr., Ph.D. (U. Conn.), Visiting Educational Specialist.

Barbara Ingersoll, Ph.D. (Penn St. U.), Associate Professor of Community Dentistry.

Kent E. Jackfert, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Hospital Dentistry, Charleston Division.



C. Russell Jackson, D.D.S. (WVU), Associate Professor of Operative Dentistry.  
 S. N. Jagannathan, Ph.D. (U. Bombay), Associate Professor of Community Dentistry.  
 Avia J. Kaplan, M.S. (Boston U.), Associate Professor of Dental Hygiene.  
 Richard C. Kelly, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Operative Dentistry.  
 Gordon G. Keyes, D.D.S. (U. Md.), Associate Professor of Oral Pathology.  
 Darryl R. King, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Oral Surgery.  
 Edward Klein, D.D.S. (U. Pitt), Clinical Instructor in Hospital Dentistry.  
 Edwin V. Kluth, D.D.S. (Case West. Res. U.), Associate Professor of Maxillofacial Prosthodontics.  
 Barbara K. Komives, M.S. (Ohio St. U.), Associate Professor and Chairperson of Dental Hygiene.  
 Marcia Krouse, M.S. (U. Ky.), Assistant Professor of Dental Hygiene.  
 Lonnie Kuhn, D.D.S. (WVU), Clinical Instructor in Community Dentistry.  
 Stephen J. Kwiatkowski, D.D.S. (WVU), Associate Professor of Fixed Prosthodontics.  
 Claude R. Lee, D.M.D. (U. Ky.), Clinical Instructor in Hospital Dentistry.  
 Young J. Lee, D.D.S. (U. Korea), Assistant Professor of Maxillofacial Prosthodontics.  
 Frank J. Lopez, D.D.S. (WVU), Assistant Professor of Dental Practice Management.  
 Raymond L. McCutcheon, D.D.S. (WVU), Clinical Assistant Professor of Prosthodontics.  
 William R. McCutcheon, D.D.S. (WVU), Professor and Chairperson of Community Dentistry.  
 Chris A. Martin, D.D.S. (WVU), Clinical Assistant Professor of Pediatric Dentistry.  
 Hubert E. Martin, D.D.S. (U. Pitt), Clinical Assistant Professor (part-time) of Orthodontics.  
 Jack R. Martin, D.D.S. (U. Md.), Clinical Assistant Professor of Orthodontics.  
 Richard L. Meckstroth, D.D.S. (Loma Linda U., Calif.), Assistant Professor of Community Dentistry.  
 Michael T. Montgomery, D.D.S. (Va. Cwealth U.), Assistant Professor of Hospital Dentistry.  
 Robert N. Moore, D.D.S. (Northwestern U.), Associate Professor of Orthodontics.  
 Wilbur D. Moorman, D.D.S. (Va. Cwealth U.), Clinical Professor of Hospital Dentistry.  
 Susan Kay Morgan, M.S. (WVU), Clinical Assistant Professor of Dental Hygiene.  
 Donald J. Morrison, D.D.S. (U. Iowa), Professor and Chairperson of Periodontics.  
 Kelly Mott, D.D.S. (WVU), Clinical Assistant Professor, Charleston Division.  
 Robert L. Murphy, M.S. (Cath. U. Am.), Adjunct Associate Professor of Community Dentistry.  
 David A. Nash, D.M.D. (U. Ky.), Professor and Chairperson of Pediatric Dentistry.  
 Gary G. Naylor, D.D.S. (WVU), Clinical Assistant Professor (part-time) of Operative Dentistry.  
 Leslie E. Nicholson, D.D.S. (WVU), Clinical Instructor (part-time) in Pediatric Dentistry.  
 Linda S. Oliver, D.D.S. (U. Md.), Clinical Assistant Professor (part-time) of Periodontics.  
 Franklin Oliverio, D.D.S. (U. Md.), Clinical Assistant Professor (part-time) of Oral Surgery.  
 James E. Overberger, D.D.S. (U. Pitt), Associate Dean; Professor of Dental Materials.  
 Donald E. Pathoff, D.D.S. (U. Detroit), Clinical Instructor in Hospital Dentistry.  
 Robert Pawlicki, Ph.D. (York U.) Adjunct Associate Professor of Community Dentistry.  
 James L. Payne, D.D.S. (U. Mo.), Clinical Instructor in Hospital Dentistry.  
 Robert G. Pifer, D.D.S. (WVU), Associate Professor of Oral Diagnosis and Radiology.  
 David T. Puderbaugh, D.D.S. (WVU), Professor and Chairperson of Dental Practice Management.  
 Nancy V. Ramsey, M.S. (U. Mich.), Adjunct Professor of Dental Hygiene.  
 Vernon Rodeffer, D.D.S. (U. Md.), Assistant Professor of Operative Dentistry.  
 William J. Rosenfeld, D.D.S. (SUNY), Clinical Assistant Professor of Periodontics.  
 Jack A. Roth, D.D.S. (U. Md.), Assistant Professor of Removable Prosthodontics.  
 Richard A. Salzer, D.M.D. (U. Penn), Clinical Assistant Professor of Hospital Dentistry.  
 Robert E. Sausen, D.D.S. (U. Minn.), Professor and Chairperson of Operative Dentistry.  
 Donald T. Sauter, D.D.S. (Ohio St. U.), Clinical Instructor (part-time) in Prosthodontics.  
 William L. Shelton, D.D.S. (WVU), Clinical Instructor in Community Dentistry.  
 Carol A. Sherrill, M.S. (U. Mich.), Associate Professor of Dental Hygiene.  
 Alex W. Skaff, D.D.S. (WVU), Clinical Assistant Professor of Hospital Dentistry.



A. E. Skidmore, D.D.S. (WVU), *Professor and Chairperson of Endodontics.*  
 Homer W. Smith, D.D.S. (WVU), *Associate Professor of Oral Diagnosis and Radiology.*  
 Norton P. Smith, D.D.S. (WVU), *Assistant Professor of Fixed Prosthodontics.*  
 James M. Snyder, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry.*  
 Wendy J. Z. Spagnoli, D.D.S. (WVU), *Clinical Instructor in Pediatric Dentistry.*  
 Charles J. Stewart, D.D.S. (WVU), *Assistant Professor of Endodontics and Prosthodontics.*  
 Lawrence E. Syner, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry.*  
 Andrew J. Tatich, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Daniel R. Taylor, D.D.S. (WVU), *Clinical Instructor in Endodontics.*  
 Nancy E. Taylor, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 William C. Taylor, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Prosthodontics.*  
 James G. Thomas, D.D.S. (Temple U.), *Professor of Oral Diagnosis and Radiology.*  
 Kay F. Thompson, D.D.S. (U. Pitt), *Clinical Professor of Community Dentistry.*  
 Harold E. Tucker, D.D.S. (Va. Cwealth U.), *Professor of Fixed Prosthodontics.*  
 LeRoy J. Utt, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Operative Dentistry.*  
 James E. Valentine, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Alan K. Vance, D.D.S. (WVU), *Clinical Instructor in Community Dentistry.*  
 Edmond G. VandenBosche, D.D.S. (U. Md.), *Associate Professor of Operative Dentistry.*  
 Alfred VanRiper, D.D.S. (WVU), *Clinical Associate Professor (part-time) of Removable Prosthodontics.*  
 Joseph E. Van Sickels, D.D.S. (Va. Cwealth. U.), *Assistant Professor of Oral Surgery.*  
 David H. Walker, D.D.S. (WVU), *Associate Professor of Dental Practice Management, Charleston Division.*  
 Robert L. Wanker, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Periodontics.*  
 William A. Weaver, D.D.S. (Ohio St. U.), *Associate Professor of Operative Dentistry.*  
 John T. Welch, D.D.S. (U. Md.), *Professor and Chairperson of Hospital Dentistry.*  
 Stephen G. Wilbourn, D.D.S. (WVU), *Clinical Instructor in Hospital Dentistry.*  
 John B. Wilfong, D.D.S. (Ohio St. U.), *Clinical Assistant Professor (part-time) of Orthodontics.*  
 Thomas S. Wilkerson, D.D.S. (WVU), *Clinical Assistant Professor of Pedodontics.*  
 John A. Wilson, D.D.S. (Ohio St. U.), *Clinical Associate Professor of Community Dentistry.*  
 Michael A. Wilson, D.D.S. (WVU), *Clinical Assistant Professor (part-time) of Oral Surgery.*  
 William M. Wine, D.D.S. (WVU), *Clinical Assistant Professor of Hospital Dentistry.*

## School of Medicine

Fouad Hassan Abdalla, M.D. (Alexandria U., Egypt), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Ernest L. Abernathy, M.D. (Emory U.), *Clinical Professor of Pathology.*  
 Henry L. Abrons, M.D. (Case West. Res. U.), *Assistant Professor of Medicine (Pulmonary).*  
 Ali Fawzi AbuRahma, M.B.Ch. (Alexandria U., Egypt), *Clinical Instructor in Surgery.*  
 Shirley J. Albright, B.S. (U. Penn.), *Clinical Instructor in Physical Therapy.*  
 Margaret J. Albrink, M.D. (Yale U.), *Professor of Medicine (Metabolism-Endocrinology).*  
 Wilhelm S. Albrink, Ph.D., M.D. (Yale U.), *Professor Emeritus of Pathology.*  
 John C. Alexander, Jr., M.D. (Duke U.), *Associate Professor of Surgery.*  
 Gabriel Al-Hajj, M.D. (Am. U. Beirut), *Clinical Assistant Professor of Surgery.*  
 Firas H. AlKawas, M.D. (Damascus U.), *Assistant Professor of Medicine (Gastroenterology).*  
 Joel Allen, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Greenbrier D. Almond, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Robert B. Altmeyer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Pulmonary Medicine).*  
 R. Stephen Amato, M.D. (U. Nebr.), *Professor of Pediatrics.*

Richard G. Ames, Ph.D. (U. N.C.), Adjunct Associate Professor of Community Medicine.

Constantino Y. Amores, M.D. (U. Santo Tomas), Clinical Assistant Professor of Neurological Surgery.

Edwin L. Anderson, M.D. (U. S.C.), Assistant Professor of Pediatrics, Charleston Division.

Roger W. Anderson, M.D. (WVU), Assistant Professor of Otolaryngology.

Vicente Anido, M.D. (Havana U.), Professor Emeritus of Pathology (Clinical).

Dominic A. Antico, M.D. (U. Chi.), Clinical Associate Professor of Radiology (Diagnostic).

Michael Arbitman, M.D. (U. Louisville), Clinical Associate Professor of Radiology (Diagnostic).

James G. Arbogast, M.D. (WVU), Assistant Professor of Family Practice.

Constantino C. Arceo, M.D. (U. St. Thomas—Manila), Clinical Associate Professor of Obstetrics and Gynecology.

Jerome Arnett, M.D. (WVU), Clinical Assistant Professor of Medicine (Pulmonary).

Steven A. Artz, M.D. (Syracuse U.), Clinical Associate Professor of Medicine (Comprehensive Medicine).

Mohammad Ashraf, M.B.B.S. (King Edward Med. C.), Associate Professor of Obstetrics and Gynecology.

Terry A. Athari, M.D. (Tehran Med. Sch.), Clinical Assistant Professor of Obstetrics and Gynecology.

Robert B. Atkins, M.D. (WVU), Clinical Instructor in Community Medicine.

Bipinchandra M. Avashia, M.B.B.S. (Med. C., Baroda), Clinical Assistant Professor of Medicine (Pulmonary).

Michael D. Avington, M.D. (Georgetown U.), Clinical Professor of Medicine; (Cardiology).

Frederick P. Avis, M.D. (U. N.C.), Assistant Professor of Surgery.

Frank J. Ayd, M.D. (U. Md.), Clinical Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Moustassem Ayoubi, M.D. (Damascus U.), Clinical Associate Professor of Pediatrics.

Robert W. Azar, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.

Albert J. Azzaro, Ph.D. (WVU), Professor of Neurology and Pharmacology and Toxicology.

Paul Bachwitz, M.D. (Med. C. Va.), Clinical Assistant Professor of Orthopedic Surgery.

Ronald C. Backer, Ph.D. (U. Ariz.), Adjunct Assistant Professor of Pharmacology and Toxicology.

Arpy Balian, M.D. (Aleppo U. Med.), Assistant Professor of Pediatrics (Pediatric Cardiology).

Bryan Ballantyne, Ph.D., M.D. (U. Leeds, UK), Adjunct Professor of Pharmacology and Toxicology.

Prakash C. Bangani, M.B.B.S. (Med. C., Indore), Clinical Assistant Professor of Orthopedic Surgery.

Carl C. Barger, M.D. (Med. C. Va.), Clinical Associate Professor of Radiology (Diagnostic).

Carolyn E. Barnes, Ph.D. (U. Pitt), Associate Professor of Physical Therapy.

Margaret Mary Barron, M.D. (U. Chicago), Clinical Assistant Professor of Pediatrics.

John J. Barry, III, M.D. (Dartmouth C.), Assistant Professor of Medicine (Infectious Diseases) and Physician in University Health Services.

Dilip K. Basu, M.B.B.S. (U. Calcutta), Clinical Associate Professor of Medicine (Cardiology).

Mildred Bateman, M.D. (Wom. Med. C. Pa.), Clinical Professor of Behavioral Medicine and Psychiatry.

John J. Battagline, M.D. (Med. C. Va.), Clinical Assistant Professor of Obstetrics and Gynecology.

Susan C. Beeler, B.S. (U. Ky.), Clinical Instructor in Physical Therapy.

Kamal M. Behnam, M.D. (U. Cairo), Clinical Professor of Obstetrics and Gynecology.

Soad Bekheit-Saad, M.D. (U. Cairo), Ph.D. (Queen's U., Belfast), Associate Professor of Medicine (Cardiology).

John A. Belis, M.D. (Jeff. Med. C.), Associate Professor of Urology.

Ross O. Bell, M.D. (U. Penn), Clinical Associate Professor of Pathology.

John A. Bellotte, M.D. (WVU), Clinical Assistant Professor of Anesthesiology.

William A. Beresford, Ph.D. (Oxford U.), Professor of Anatomy.

James L. Bergman, M.D. (Tulane U.), Clinical Instructor in Family Practice.

Stuart K. Bergman, M.D. (Geo. Wash. U.), Clinical Assistant Professor of Anesthesiology.

Ellen S. Berler, Ph.D. (SUNY—Binghamton), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Bruce L. Berry, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Robert Bettinger, M.D. (Med. C. Va.), *Associate Professor of Anesthesiology.*

Harry A. Bishop, M.D. (U. Calif.—S.F.), *Clinical Associate Professor of Radiology (Diagnostic).*

J. David Blaha, M.D. (U. Mich.), *Assistant Professor of Orthopedic Surgery.*

James B. Blair, Ph.D. (U. Va.), *Professor of Biochemistry.*

James E. Bland, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*

Donald M. Blatchley, M.D. (Jeff. Med. C.), *Clinical Professor Emeritus of Medicine (Dermatology).*

James E. Blaydes, M.D. (U. Penn), *Clinical Associate Professor of Ophthalmology.*

Nancie A. Blehschmidt, B.S. (WVU), *Instructor in Medicine (Metabolism-Endocrinology) and Medical Technology.*

Donald A. Blum, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Robert C. Bock, M.D. (U. Louisville), *Clinical Associate Professor of Surgery.*

James P. Boland, M.D. (Jeff. Med. C.), *Professor and Chief of Surgery, Charleston Division.*

Walter A. Bonney, Jr., M.D. (Columbia U.), *Clinical Professor of Obstetrics and Gynecology.*

Beverly R. Born, B.S. (WVU), *Clinical Assistant Professor of Physical Therapy.*

Susan P. Borsuk, B.S. (U. Md.), *Clinical Instructor in Physical Therapy.*

Edward M. Bosanac, Dr.P.H. (U. Pitt), *Associate Professor of Community Medicine.*

Jerry E. Bouquot, D.D.S. (U. Minn.), *Associate Professor of Pathology.*

Mohammed M. Boustany, M.D. (Damascus U.), *Clinical Assistant Professor of Surgery.*

Robert E. Bowen, M.D. (U. Ill.), *Adjunct Instructor in Anesthesiology.*

K. Douglas Bowers, Jr., M.D. (Jeff. Med. C.), *Clinical Associate Professor of Orthopedic Surgery.*

Carole Brooks Boyd, M.D. (Wayne St. U.), *Associate Professor of Pathology.*

Bert E. Bradford, Jr., M.D. (Wash. U.), *Clinical Professor Emeritus of Surgery.*

Nancy K. Brallier, M.S.W. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*

Lenore A. Breen, M.D. (U. Tex.—Galveston), *Assistant Professor of Neurology and Ophthalmology.*

Eric P. Brestel, M.D. (U. Fla.), *Assistant Professor of Medicine (Allergy and Clinical Immunology) and Physician, University Health Service.*

Clinton A. Briley, Jr., M.D. (U. N.C.), *Clinical Assistant Professor of Radiology (Diagnostic).*

George J. Brodmerkel, Jr., M.D. (Stritch Sch. Med.), *Clinical Professor of Medicine (Gastroenterology).*

Arlo P. Brooks, Jr., M.D. (WVU), *Clinical Associate Professor of Family Practice.*

John W. Brough, Dr.P.H. (U. N.C.), *Adjunct Assistant Professor of Community Medicine.*

Paul B. Brown, Ph.D. (U. Chicago), *Professor of Physiology.*

Timothy A. Brown, M.D. (WVU), *Clinical Instructor in Medicine (Dermatology).*

James Bryant, M.D. (WVU), *Clinical Associate Professor of Otolaryngology.*

Dennis Burech, M.D. (Ohio St. U.), *Clinical Associate Professor of Pediatrics.*

Barbara F. Burkart, Cert. P.T. (U. Penn), *Clinical Instructor in Physical Therapy.*

Sandy L. Burkart, Ph.D. (WVU), *Chairperson, Director, and Professor of Physical Therapy.*

David B. Burr, Ph.D. (U. Colo.), *Assistant Professor of Anatomy and Orthopedic Surgery.*

Robert G. Burrell, Ph.D. (Ohio St. U.), *Professor of Microbiology.*

Fred R. Butcher, Ph.D. (Ohio St. U.), *Chairperson, Professor of Biochemistry.*

Roy L. Butcher, Ph.D. (Iowa St. U.), *Professor of Obstetrics and Gynecology.*

Christy Ann Butler, M.S. (U. N.C.), *Assistant Professor of Medical Technology.*

John W. Byrd, M.D. (WVU), *Clinical Assistant Professor of Medicine (Rheumatology).*

Bobby Lee Caldwell, M.D. (Bowman Gray Sch. Med.), *Clinical Professor of Pathology.*

Edward J. Callahan, Ph.D. (U. Vt.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Margaret Calvert, B.S., Cert.P.T. (U. Del.), *Clinical Assistant Professor of Physical Therapy.*

Fred C. Campbell, Jr., M.D. (Baylor U.), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*

William J. Canady, Ph.D. (Geo. Wash. U.), *Professor of Biochemistry.*

James Capage, Ph.D. (Ohio U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*



Billy R. Carlton, Ed.D. (U. Tenn.), Adjunct Associate Professor of Community Medicine.

Marshall J. Carper, M.D. (Med. C. Va.) Professor and Chief of Family Practice, Charleston Division.

Donald C. Carter, M.D. (U. Nebr.), Professor of Behavioral Medicine and Psychiatry.

Gregory S. Carter, M.D. (WVU), Clinical Assistant Professor of Neurology.

Howard A. Carter, M.D. (Johns Hopkins U.), Clinical Assistant Professor of Anesthesiology.

William H. Carter, M.D. (U. Va.), Clinical Professor of Medicine (Cardiology).

Nicholas Cassis, Jr., M.D. (WVU), Clinical Assistant Professor of Medicine (Metabolism and Endocrinology).

John N. Casto, M.D. (WVU), Clinical Instructor in Family Practice.

Vincent Castranova, Ph.D. (WVU), Adjunct Associate Professor of Physiology.

Leonidas Castro, M.D. (Nat'l. U. Colombia), Clinical Professor of Radiology (Radiation Therapy).

John R. Casuccio, M.D. (Ohio St. U.), Instructor in Otolaryngology.

Carl H. Cather, Jr., M.D. (Harvard U.), Clinical Associate Professor of Otolaryngology.

Carrel M. Caudill, M.D. (Duke U.), Clinical Professor of Neurological Surgery.

Jose A. Celis, M.D. (U. Santo Tomas), Clinical Assistant Professor of Urology.

Graciano E. Cendana, M.D. (U. Santo Tomas), Clinical Associate Professor of Pathology.

John T. Chambers, M.D. (Case West. Res. U.), Clinical Professor of Obstetrics and Gynecology.

June R. Chambers, M.D. (Case West. Res. U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Malcolm L. Chaney, M.D. (WVU), Assistant Professor of Family Practice, Charleston Division.

Cheng-Tien Chang, Ph.D. (SUNY), Assistant Professor of Radiology (Radiation Safety).

Ho-Huang Chang, M.B. (Kaohsiung Med. C.), Clinical Assistant Professor of Pathology.

William W. L. Chang, M.D. (Nat'l. Taiwan U.), Associate Professor of Pathology.

Jacques Charbonniez, M.D. (French U.), Clinical Professor of Surgery.

Nyles Charon, Ph.D. (U. Minn.), Associate Professor of Microbiology.

V. Krishnarao Chevuru, M.D. (Fac. Med., Andhra U.), Clinical Instructor in Anesthesiology.

Elliott W. Chideckel, M.D. (U. Md.), Associate Professor of Medicine (Metabolism-Endocrinology).

Louise Christensen, B.S. (WVU), Clinical Instructor in Physical Therapy.

Thomas E. Chvasta, M.D. (U. Pitt), Clinical Associate Professor of Medicine (Gastroenterology).

Joseph A. Cipcic, M.D. (U. Pitt), Clinical Assistant Professor of Otolaryngology.

Ann Kisner Clark, M.D. (WVU), Clinical Assistant Professor of Obstetrics and Gynecology.

Thomas S. Clark, M.D. (WVU), Clinical Assistant Professor of Family Practice.

George B. Clarke, M.D. (Case West. Res. U.), Clinical Professor of Orthopedic Surgery.

John P. Claude, M.S.W. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Paul L. Clausell, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

Ronald L. Cleavenger, M.D. (WVU), Assistant Professor of Family Practice and Physician, University Health Service.

Robert J. Clubb, M.D. (Northwestern U.), Clinical Assistant Professor of Neurological Surgery.

Robert C. Cody, M.A. (U. Iowa), Professor of Otolaryngology.

Brenda K. Colasanti, Ph.D. (WVU), Professor of Ophthalmology, and Pharmacology and Toxicology.

Howard D. Colby, Ph.D. (SUNY), Professor of Physiology.

Frank L. Collins, Ph.D. (Auburn U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

David F. Colvin, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine).

Philip E. Comer, Ph.D. (WVU), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Janice W. Cone, M.S. (U. Denver), Associate Professor of Behavioral Medicine and Psychiatry.

Fredrick A. Conley, M.D. (WVU), Clinical Instructor in Family Practice.



Arthur G. Conn, M.D. (Wayne St. U.), Assistant Professor of Radiology (Diagnostic).  
 Karen A. Connors, Ph.D. (Temple U.), Adjunct Assistant Professor of Pediatrics.  
 Frederick M. Cooley, M.D. (WVU), Clinical Associate Professor of Community Medicine.  
 Ronald E. Cordell, M.D. (U. Tenn.), Clinical Assistant Professor of Radiology (Diagnostic).  
 Creel S. Cornwell, Jr., M.D. (WVU), Clinical Assistant Professor of Medicine (Cardiology).  
 Joel I. Cossrow, M.D. (T. Jeff. Med. U.), Clinical Assistant Professor of Radiology (Diagnostic).  
 Donald W. Cox, M.D. (Geo. Wash. U.), Chairperson and Professor of Obstetrics and Gynecology.  
 Charles R. Craig, Ph.D. (U. Wisc.), Professor of Pharmacology and Toxicology.  
 James C. Crews, M.A. (U. Iowa), Adjunct Associate Professor of Community Medicine.  
 William D. Crigger, M.D. (Temple U.), Clinical Assistant Professor of Family Practice.  
 Thomas W. Crosby, M.D. (WVU), Clinical Associate Professor of Neurology and Pathology.  
 Michael R. Cuadra, M.D. (U. Santo Tomas), Clinical Assistant Professor of Pathology.  
 James L. Culberson, Ph.D. (Tulane U.), Associate Professor of Anatomy.  
 Jan H. Cunningham, M.D. (WVU), Clinical Assistant Professor of Obstetrics and Gynecology.  
 Polley H. Cunningham, M.D. (WVU), Clinical Assistant Professor of Medicine (Rheumatology).  
 Roberta Curiel, M.S. (WVU), Clinical Instructor in Otolaryngology.  
 Larry Curnutte, M.D. (WVU), Clinical Assistant Professor of Obstetrics and Gynecology.  
 John C. Cwik, M.D. (Jeff. Med. C.), Clinical Professor of Anesthesiology.  
 Robert D'Alessandri, M.D. (N.Y. Med. C.), Associate Professor of Medicine and Section Chief of Comprehensive Medicine.  
 Aloysius Davis, M.D. (Harvard U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Charles M. Davis, Jr., M.D. (U. Penn.), Clinical Professor of Orthopedic Surgery.  
 DelRoy R. Davis, M.D. (U. Wash.), Clinical Professor of Family Practice.  
 Mary Elizabeth Davis, Ph.D. (Mich. St. U.), Assistant Professor of Pharmacology and Toxicology.  
 Wirt L. Davis, M.D. (Med. C. Va.), Clinical Assistant Professor of Orthopedic Surgery.  
 Harakh V. Dedhia, M.B.B.S. (Grant Med. C.), Associate Professor of Anesthesiology and Medicine (Critical Care).  
 Cordell A. DeLaPena, M.D. (U. Santo Tomas), Clinical Assistant Professor of Pathology.  
 Erlinda L. DeLaPena, M.D. (U. Santo Tomas), Clinical Assistant Professor of Pathology.  
 Bharati S. Desai, M.B.B.S. (Baroda Med. C.), Assistant Professor of Behavioral Medicine and Psychiatry.  
 Richard A. DeVaul, M.D. (U. Rochester), Professor of Behavioral Medicine; Dean, School of Medicine.  
 Anthony DiBartolomeo, M.D. (WVU), Professor of Medicine; Section Chief of Rheumatology; Assistant Dean for Graduate Medical Education; Medical Director of Ambulatory Care.  
 Thomas O. Dickey, M.D. (Ohio St. U.), Clinical Assistant Professor of Family Practice.  
 Herbert G. Dickie, Jr., M.D. (U. Va.), Clinical Assistant Professor of Surgery.  
 Ronald W. Dillow, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 Beverly Diurba, B.S. (U. Pitt), Clinical Instructor in Physical Therapy.  
 Larry A. Dodd, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.  
 Frederick W. Donovan, Psy.D. (U. Ill.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Dinesh M. Doshi, M.B.B.S. (U. Bombay), Associate Professor of Anesthesiology.  
 Marion H. Drews, M.D. (U. S.C.), Clinical Instructor in Medicine (Nephrology).  
 John J. Duda, Ph.D. (WVU), Adjunct Assistant Professor of Microbiology.  
 Harry E. Duncan, Jr., M.D. (WVU), Clinical Assistant Professor of Medicine (Gastroenterology).  
 Ralph O. Dunker, Jr., M.D. (Ohio St. U.), Associate Professor of Neurological Surgery.  
 Dorothy C. Dunning, Ph.D. (Tufts U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 James Durig, M.D. (WVU), Clinical Assistant Professor of Urology.  
 John W. Durkin, Jr., M.D. (U. Vt.), Associate Professor of Obstetrics and Gynecology and Chief of Obstetrics and Gynecology, Wheeling Division.  
 George W. Easley, M.D. (Med. C. Va.), Clinical Associate Professor Emeritus of Surgery.

Leonard M. Eckmann, M.D. (NYU), *Clinical Assistant Professor of Family Practice.*  
 Barry A. Edelstein, Ph.D. (Memphis St. U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Roy A. Edwards, Jr., M.D. (Med. C. Va.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Richard W. Eller, M.D. (Temple U.), *Professor of Anesthesiology.*  
 John S. Ellingson, Ph.D. (U. Mich.), *Associate Professor of Biochemistry.*  
 Thomas E. Ellis, Psy.D. (Baylor U.), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 M. K. Elyaderani, M.D. (Tehran U.), *Professor of Radiology (Diagnostic).*  
 Patricia R. Evans, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Alexander V. Fakadej, M.D. (U. Va.), *Associate Professor of Neurology and Pediatrics.*  
 Donald Farmer, M.D. (WVU), *Clinical Assistant Professor of Medicine (Dermatology).*  
 Asghar Farsaii, M.D. (Med. Sch. Tabriz, Iran), *Clinical Instructor in Urology.*  
 Okey B. Fawley, M.S.W. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Pamela M. Fawley, M.D. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
 Jeffrey Fedan, Ph.D. (U. Ala.), *Adjunct Associate Professor of Pharmacology and Toxicology.*  
 Charles W. Fedde, M.D. (U. Colo.), *Clinical Assistant Professor of Surgery.*  
 Arlene J. (Stern) Feder, M.D. (Hahnemann Med. C.), *Assistant Professor of Medicine, Wheeling Division.*  
 Joseph E. Fernandes, M.D. (Padua Med. C.), *Clinical Instructor in Orthopedic Surgery.*  
 Michael O. Fidler, M.D. (U. Va.), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Edmundo E. Figueroa, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Surgery.*  
 Kenneth M. Fink, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Thomas E. Finucane, M.D. (Emory U.), *Assistant Professor of Medicine (Comprehensive Medicine).*  
 William W. Fleming, Ph.D. (Princeton U.), *Professor and Chairperson of Pharmacology and Toxicology.*  
 Edmund B. Flink, M.D., Ph.D. (U. Minn.), *Benedum Professor of Medicine (Metabolism-Endocrinology) and Behavioral Medicine and Psychiatry.*  
 David C. Fogarty, M.D. (WVU), *Clinical Assistant Professor of Surgery.*  
 Joseph A. Fontana, M.D. (U. Penn.), *Assistant Professor of Medicine (Hematology/Oncology) and Biochemistry.*  
 Richard J. Fonte, M.D. (N.J. Med. Sch.), *Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Leland J. Foshag, M.D. (Ohio St. U.), *Assistant Professor of Surgery.*  
 John F. Foss, M.D. (U. Iowa), *Associate Professor of Obstetrics and Gynecology.*  
 Daniel S. Foster, M.D. (Stanford U.), *Clinical Assistant Professor of Surgery.*  
 Paul Francke, M.D. (U. Chicago), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Gunter N. Franz, Ph.D. (U. Wash.), *Associate Professor of Physiology.*  
 David G. Frazer, Ph.D. (WVU), *Adjunct Associate Professor of Physiology.*  
 Richard G. Frederickson, Ph.D. (U. N. Dak.), *Associate Professor of Anatomy.*  
 John C. Frich, Jr., M.D. (Geo. Wash. U.), *Professor of Radiology and Section Chief of Radiation Therapy.*  
 Morton H. Friedman, Ph.D. (U. Tenn.), *Associate Professor of Anatomy.*  
 James L. Frost, M.D. (Johns Hopkins U.), *Associate Professor of Pathology.*  
 Paul E. Frye, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Nicholas W. Fugo, M.D. (U. Chi.), Ph.D. (St. U. Iowa), *Professor Emeritus of Obstetrics and Gynecology.*  
 Paul H. Fulcher, M.D. (WVU), *Clinical Instructor in Obstetrics and Gynecology.*  
 John L. Fullmer, M.D. (WVU), *Clinical Associate Professor of Family Practice.*  
 Peter Gabriel, M.D. (Creighton U.), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Orlando F. Gabriele, M.D. (Yale U.), *Professor and Chairperson of Radiology.*  
 R. Brooks Gainer, M.D. (WVU), *Clinical Associate Professor of Medicine (Infectious Diseases).*  
 Richard D. Gais, M.D. (WVU), *Clinical Instructor in Family Practice.*  
 Hugh Galford, B.S. (D&E C.), *Clinical Assistant Professor of Physical Therapy.*  
 Gary Francis Ganahl, Ph.D. (Ga. St. U.), *Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Reynaldo T. Gannon, M.D. (U. Santo Tomas), *Clinical Assistant Professor of Anesthesiology.*

Linda M. Gantt, M.A. (Geo. Wash. U.), *Clinical Instructor in Behavioral Medicine and Psychiatry.*

Barbara Garland, Ph.D. (U. N.C.), *Assistant Professor of Community Medicine.*

Warfield Garson, M.D. (USC), *Adjunct Associate Professor of Community Medicine.*

Ronald D. Gaskins, M.D. (U. S.C.), *Associate Professor of Medicine and Section Chief of Gastroenterology.*

Dominic J. Gaziano, M.D. (Med. C. Va.), *Clinical Professor of Medicine (Pulmonary Medicine).*

Zena L. Gee, M.S. (U. Pitt), *Clinical Instructor in Physical Therapy.*

James A. Genin, M.D. (WVU), *Clinical Assistant Professor of Ophthalmology.*

Dimitar Georgiev, M.D. (U. St. Klement), *Clinical Assistant Professor of Obstetrics and Gynecology.*

Maria Georgiev, M.D. (Med. Sch. Charles U.), *Associate Professor of Medicine, Charleston Division.*

Vincent F. Gerencser, Ph.D. (U. Ky.), *Associate Professor of Microbiology.*

Alfred D. Ghaphery, M.D. (U. Pitt), *Clinical Associate Professor of Surgery.*

Robert L. Ghiz, M.D. (Northwestern U.), *Clinical Associate Professor of Orthopedic Surgery.*

William E. Gilmore, M.D. (U. Wisc.), *Clinical Professor of Surgery.*

Fernando G. Giustini, M.D. (U. Rome), *Clinical Professor of Obstetrics and Gynecology.*

Wilbert E. Gladfelter, Ph.D. (U. Penn), *Associate Professor of Physiology.*

Henry R. Glass, Jr., M.D. (U. Louisville), *Clinical Associate Professor of Surgery.*

Dale A. Glick, M.D. (U. Okla.), *Clinical Assistant Professor of Anesthesiology.*

A. Raphael Gomez, M.D. (Bowman Gray Sch. Med.), *Clinical Assistant Professor of Medicine (Hematology/Oncology).*

Irving J. Goodman, Ph.D. (U. Rochester), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*

Robert L. Goodman, M.D. (U. Pitt), *Assistant Professor of Physiology.*

Andrew Goodwin, M.D. (U. Mich.), *Clinical Professor of Radiology (Diagnostic).*

Claudia (Morgan) Goodwin, M.D. (WVU), *Clinical Associate Professor of Radiology (Diagnostic).*

James E. Goodwin, M.D. (Temple U.), *Clinical Instructor in Family Practice.*

Phillip H. Goodwin, M.H.A. (Wash. U.), *Adjunct Assistant Professor of Community Medicine.*

Lionel Gorbaty, M.D. (Geo. Wash. U.), *Adjunct Assistant Professor of Radiology (Diagnostic).*

Thomas W. Graber, M.D. (Case West. Res. U.), *Clinical Assistant Professor of Surgery.*

David F. Graf, M.D. (Albany Med. C.), *Assistant Professor of Anesthesiology.*

Anthony W. Graham, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*

Robert J. Graham, Ed.D. (U. Mich.), *Adjunct Assistant Professor of Community Medicine.*

Juan L. Granados, M.D. (U. Madrid), *Associate Professor of Obstetrics and Gynecology.*

Robert W. Graves, D.D.S. (WVU), *Professor of Pharmacology and Toxicology.*

David B. Gray, M.D. (U. Md.), *Clinical Professor of Surgery.*

Francis H. Green, M.D. (Manchester U.), *Adjunct Assistant Professor of Pathology.*

Daniel H. Gregory, M.D. (U. Va.), *Clinical Professor of Medicine (Gastroenterology).*

Galo E. Grijalva, M.D. (U. Mexico), *Clinical Instructor in Pediatrics.*

Louise C. Grim, B.A. (McGill U.), *Clinical Instructor in Physical Therapy.*

Frank C. Griswold, M.D. (WVU), *Clinical Assistant Professor of Surgery.*

Joyce Y. Gross, M.D. (U. Md.), *Assistant Professor of Medicine (Comprehensive Medicine).*

George Grubb, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*

Stephen Grubb, M.D. (Med. C. Va.), *Associate Professor of Medicine, Charleston Division.*

Beverly Ann Gryth, B.A. (Augsburg C.), *Clinical Assistant Professor of Physical Therapy.*

Amar N. Gulati, M.B., B.S. (P.W. Med. C.—India), *Clinical Assistant Professor of Radiology (Diagnostic).*

Robert F. Gustke, M.D. (WVU), *Clinical Assistant Professor of Medicine (Gastroenterology).*

Barbara J. Gutman, M.Ed. (U. Pitt), *Assistant Professor of Medical Technology.*

Ludwig Gutmann, M.D. (Columbia U.), *Professor and Chairperson of Neurology; Professor of Physiology.*

Ernest S. Guy, M.D. (WVU), *Assistant Professor of Medicine (Comprehensive Medicine).*



Nicholas Hahon, B.S. (D&E C.), Adjunct Assistant Professor of Pediatrics.  
 Duane E. Haines, Ph.D. (Mich. St. U.), Professor and Associate Chairperson of Anatomy.  
 Charles E. Haislip, M.D. (WVU), Clinical Associate Professor of Otolaryngology.  
 Milton R. Hales, M.D. (U. S.C.), Professor of Pathology.  
 Carl B. Hall, Sr., M.D. (Med. C. Va.), Clinical Professor of Family Practice.  
 David S. Hall, Ph.D. (U. Ky.), Associate Professor of Community Medicine.  
 John E. Hall, Ph.D. (Purdue U.), Professor of Microbiology.  
 Rodney L. Hall, M.D. (WVU), Clinical Associate Professor of Anesthesiology.  
 Trevelyn F. Hall, II, M.D. (WVU), Clinical Professor of Otolaryngology.  
 William L. Hall, M.D. (WVU), Clinical Associate Professor of Medicine (Dermatology).  
 Eugenie B. Hamilton, Ph.D. (U. Va.), Adjunct Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
 George V. Hamrick, M.D. (U. Md.), Clinical Associate Professor of Ophthalmology.  
 John L. Hankinson, M.S. (Ga. Tech.), Adjunct Assistant Professor of Physiology.  
 Luther C. Hansbarger, M.D. (Med. C. Va.), Clinical Professor of Pediatrics and Community Medicine.  
 Orville P. Harbaugh, M.D. (U. Tex., San Antonio), Clinical Assistant Professor of Medicine (Comprehensive Medicine).  
 Ann M. Harms, B.S.N. (Marymount C.), Adjunct Instructor in Behavioral Medicine and Psychiatry, Charleston Division.  
 Harold H. Harper, M.S.Pharm. (WVU), Adjunct Assistant Professor of Community Medicine.  
 Timothy G. Harper, M.D. (WVU), Clinical Assistant Professor of Medicine (Gastroenterology).  
 Charles L. Harris, Ph.D. (U. Ill.), Professor of Biochemistry.  
 Marybeth Harris, M.S. (Med. C. Va.), Instructor in Physical Therapy.  
 William L. Harris, M.D. (WVU), Clinical Instructor in Family Practice.  
 Hollister S. Harrison, M.D. (Med. C. Va.), Clinical Professor of Pediatrics.  
 Dennis L. Hart, M.S. (U. New Haven), Assistant Professor of Physical Therapy.  
 John M. Hartman, M.D. (U. Md.), Clinical Associate Professor of Medicine (Comprehensive Medicine).  
 John B. Haslam, M.D. (Duke U.), Clinical Associate Professor of Radiology (Radiation Therapy).  
 Sherman E. Hatfield, M.D. (Med. C. Va.), Clinical Associate Professor of Otolaryngology.  
 Richard D. Hayes, M.D. (WVU), Clinical Instructor in Family Practice.  
 Thomas M. Hayes, M.D. (U. Tex.—Galveston), Clinical Assistant Professor of Radiology (Diagnostic).  
 William Hayes, M.D. (Tulane U.), Clinical Associate Professor of Radiology (Diagnostic).  
 Richard J. Head, Ph.D. (Adelaide U.), Assistant Professor of Pharmacology and Toxicology.  
 George A. Hedge, Ph.D. (Stanford U.), Professor and Chairperson of Physiology.  
 Elwood H. Heilman, M.D. (U. Okla.), Clinical Assistant Professor of Orthopedic Surgery.  
 Peter L. Hein, M.D. (Georgetown U.), Professor of Behavioral Medicine and Psychiatry.  
 Terring W. Heironimus, III, M.D. (U. Va.), Professor of Anesthesiology.  
 Charles A. Heiskell, M.D. (Northwestern U.), Clinical Assistant Professor of Surgery.  
 Marta J. Henderson, M.S. (WVU), Associate Professor of Medical Technology.  
 Charles D. Hershey, M.D. (U. Mich.), Clinical Professor Emeritus of Surgery.  
 Robert D. Hess, M.D. (Med. C. Va.), Clinical Associate Professor of Family Practice.  
 Timothy B. Hetzer, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 Robert W. Hibbard, M.D. (U. Tenn.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.  
 Wally S. Hijab, M.B.,Ch.,B. (Iraqi C. Med.), Clinical Instructor in Medicine (Cardiology).  
 David P. Hill, M.D. (Duke U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Rusi A. Hilloowala, Ph.D. (U. Ala.), Associate Professor of Anatomy.  
 Bette G. Hinton, M.D. (U. Louisville), Clinical Associate Professor of Community Medicine and Family Practice.  
 David E. Hinton, Ph.D. (U. Miss.), Professor of Anatomy and Pathology.  
 George P. Hlusko, M.D. (WVU), Associate Professor of Behavioral Medicine and Psychiatry and Pediatrics, Charleston Division.  
 Florence K. Hoback, M.D. (U. Md.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Michael Hodgson, M.D. (Fac. Med., U. Frankfurt), Adjunct Instructor in Medicine (Pulmonary Medicine).



Thomas Hodous, M.D. (Johns Hopkins U.), Adjunct Assistant Professor of Medicine (Pulmonary Medicine).

Leslie Kay Hoffman, B.S. (Ohio St. U.), Clinical Instructor in Physical Therapy.

Donald H. Hofreuter, M.D. (Columbia U.), Clinical Assistant Professor of Family Practice.

Michael Hogan, M.D. (Albany Med. C.), Clinical Associate Professor of Radiology (Diagnostic).

Tom F. Hogan, M.D. (Med. C. Va.), Assistant Professor of Medicine (Hematology/Oncology) and Physician in University Health Service.

Thomas B. Hokanson, M.D. (WVU), Clinical Instructor in Family Practice.

Charles D. Holland, M.S.H.A. (Northwestern U.), Adjunct Associate Professor of Community Medicine.

Fred Holt, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.

Jeann Holter, B.S. (WVU), Associate Professor of Medical Technology.

Sung Hak Hong, M.D. (Cath. Med. C.), Clinical Assistant Professor of Radiology (Diagnostic).

Thomas A. Horsman, M.D. (WVU), Clinical Assistant Professor of Medicine (Infectious Diseases).

Brian D. Houston, M.D. (WVU), Clinical Associate Professor of Medicine (Rheumatology).

Logan W. Hovis, M.D. (U. Mich.), Clinical Assistant Professor of Anesthesiology.

Julie A. Howell, M.P.T. (Baylor U.), Clinical Instructor in Physical Therapy.

Peter A. Howland, M.D. (N.Y. Med. C.), Assistant Professor of Pediatrics.

Vera Hoylman-Ayoubi, M.D. (WVU), Clinical Associate Professor of Pediatrics.

Ellen E. Hrabovsky, M.D. (Vanderbilt U.), Associate Professor of Surgery and Pediatrics.

Francis Huber, M.D. (U. Tenn.), Clinical Assistant Professor of Anesthesiology.

Robert T. Humphries, M.D. (U. Va.), Clinical Assistant Professor Emeritus of Orthopedic Surgery.

Beatrice R. Hunter, M.S.W. (WVU), Clinical Instructor in Behavioral Medicine and Psychiatry.

John P. Hutton, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Richard M. Iammarino, M.D. (Stritch Sch. Med.), Professor of Pathology; Section Chief of Clinical Pathology.

Steven Inger, Ph.D. (Bowl. Grn. St. U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Barbara D. Ingersoll, Ph.D. (Penn St. U.), Associate Professor of Behavioral Medicine and Psychiatry.

Luna S. Iskander, M.B.B.Ch. (Cairo U.), Clinical Instructor in Pediatrics.

Rabindran Israel, M.B.B.S. (Stanley Med. C.), Clinical Associate Professor of Pediatrics.

Harry A. Jackson, M.D. (Med. C. Va.), Clinical Associate Professor of Medicine (Comprehensive Medicine).

John E. Jackson, M.D. (Temple U.), Clinical Professor of Family Practice.

Sidney B. Jackson, M.D. (WVU), Clinical Instructor in Family Practice.

Arthur R. Jacobson, M.D. (U. Tex.), Clinical Assistant Professor of Obstetrics and Gynecology.

Singanallur N. Jagannathan, Ph.D. (U. Bombay), Associate Professor of Pathology and Biochemistry.

Abnash C. Jain, M.D. (Govt. Med. C., Patiala), Professor of Medicine; Section Chief of Cardiology.

Pushpa R. Jain, M.D. (Grant Med. C.), Assistant Professor of Radiology (Radiation Therapy).

Paul J. Jakubec, M.D. (U. Pitt), Clinical Professor of Pediatrics.

Paul M. James, Jr., M.D. (Hahnemann Med. C.), Clinical Professor of Surgery.

George W. Jaquiss, M.D. (U. Kans.), Clinical Associate Professor of Otolaryngology.

Joe N. Jarrett, M.D. (U. Penn), Clinical Professor of Family Practice.

Marilyn A. Jarvis-Eckert, M.D. (U. Minn.), Clinical Associate Professor of Family Practice.

Srenniwas Jawalaker, M.B.B.S. (U. Poona—India), Clinical Assistant Professor of Anesthesiology.

Jesse J. Jenkins, III, M.D. (Johns Hopkins U.), Associate Professor of Pathology and Pediatrics.

Carl E. Johnson, M.D. (Northwestern U.), Clinical Associate Professor Emeritus of Medicine.

David G. Johnson, M.D. (WVU), Instructor in Surgery (Emergency Room).

Jerome G. Johnson, M.D. (U. Minn.), Clinical Assistant Professor of Surgery.

Michael D. Johnson, Ph.D. (U. Mich.), Assistant Professor of Physiology.

Barbara Jones, M.D. (U. Utah), Professor and Chairwoman of Pediatrics.

David S. Jones, M.D. (Loyola U.), Ph.D. (U. Minn.), Professor Emeritus of Anatomy.  
 Douglas Jones, M.D. (Vanderbilt U.), Assistant Professor of Medicine, Charleston Division.

Eric T. Jones, M.D. (U. Mich.), Associate Professor of Orthopedic Surgery.  
 John E. Jones, M.D. (U. Utah), Professor of Medicine (Metabolism-Endocrinology); Vice-President for Health Sciences.

R. Mark Jones, M.D. (WVU), Clinical Instructor in Family Practice.  
 Ronald S. Jones, M.D. (Med. C. Va.), Clinical Instructor in Obstetrics and Gynecology.  
 Steven J. Jubelirer, M.D. (U. Cinn.), Assistant Professor of Medicine, Charleston Division.

Jeffrey A. Kahn, M.D. (U. Mich.), Clinical Assistant Professor of Pathology.  
 Denise T. Kalinowski, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).

Donald B. Kamerer, M.D. (Temple U.), Clinical Associate Professor of Otolaryngology.  
 Stanley J. Kandzari, M.D. (WVU), Professor of Urology.

David A. Kappel, M.D. (WVU), Clinical Associate Professor of Surgery.  
 Joseph Kassiss, M.D. (Damascus U.), Clinical Instructor in Urology.

Thomas A. Kavic, M.D. (U. Pitt), Assistant Professor of Radiology (Diagnostic).  
 Frank J. Keefer, M.D. (Geo. Wash. U.), Clinical Assistant Professor of Family Practice.  
 George M. Kellas, M.D. (U. Penn), Clinical Associate Professor of Family Practice.

Arthur E. Kelley, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.  
 John F. Kelley, M.D. (McGill U.), Professor of Behavioral Medicine and Psychiatry, and Pediatrics.

John W. Kennard, M.D. (Bowman Gray Sch. Med.), Clinical Professor of Radiology (Diagnostic).

Roland Kennedy, M.D. (Ohio St. U.), Professor of Anesthesiology.  
 Elizabeth J. Kent, M.S.W. (WVU), Adjunct Instructor in Behavioral Medicine and Psychiatry, Charleston Division.

Robert D. Kerns, Ph.D. (U. Pitt), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

James W. Kessel, M.D. (WVU), Clinical Assistant Professor of Anesthesiology.  
 Henry L. Kettler, M.D. (WVU), Clinical Assistant Professor of Neurology.

Gordon Keyes, D.D.S. (U. Md.), Associate Professor of Pathology.  
 Rashida A. Khakoo, M.D. (Makerere U.), Associate Professor of Medicine and Acting Section Chief of Infectious Diseases.

Jamal H. Khan, M.B.B.S. (King Edward Med. C.), Clinical Associate Professor of Surgery.  
 Mohammad Z. Khan, M.B.B.S. (King Edward Med. C.), Clinical Associate Professor of Surgery.

Chung William Kim, M.D. (Kyung-pook Nat'l. U.), Clinical Assistant Professor of Surgery.

Myung-Sup Kim, M.D. (U. Tex.—Galveston), Clinical Assistant Professor of Radiology (Diagnostic).

Donald L. Kimmel, Ph.D. (U. Mich.), Professor Emeritus of Anatomy.  
 Phillip King, M.D. (Wash. U.), Clinical Assistant Professor of Radiology (Diagnostic).  
 Roger E. King, M.D. (WVU), Clinical Associate Professor of Surgery.

Steven A. King, M.D. (U. Md.), Assistant Professor of Behavioral Medicine and Psychiatry and Physician, University Health Service.

Billy E. Kirk, Ph.D. (Ohio St. U.), Associate Professor of Microbiology.  
 Richard Klabunde, Ph.D. (U. Ariz.), Assistant Professor of Physiology.

Bruce P. Klein, M.A. (NYU), Adjunct Assistant Professor of Physical Therapy.  
 Richard E. Kleinmann, M.D. (U. Penn), Assistant Professor of Medicine, Charleston Division.

Rolf Kletzien, Ph.D. (U. Wisc.), Associate Professor of Biochemistry.  
 William G. Klingberg, M.D. (Wash. U., St. Louis), Professor of Pediatrics.

Richard B. Knapp, M.D. (N.Y. Med. C.), Professor and Chairperson of Anesthesiology.  
 Thomas S. Knapp, M.D. (Jeff. Med. C.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Jehoon Peter Ko, M.D. (Korea U. Med. C.), Clinical Assistant Professor of Radiology (Diagnostic).

Jae Myung Koh, M.D. (Kyung-pook Nat'l. U.), Clinical Assistant Professor of Radiology.  
 Charles M. Koliner, M.D. (Columbia U.), Clinical Associate Professor of Anesthesiology and Medicine (Critical Care).

Martin J. Kommor, M.D. (U. S.C.), Associate Professor of Behavioral Medicine and Psychiatry and Section Chief, Charleston Division.

Richard E. Koon, M.D. (Duke U.), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Donald M. Koppel, M.D. (U. Ill.), Clinical Associate Professor of Medicine (Hematology/Oncology).

Ray Koppelman, Ph.D. (U. Chicago), Professor of Biochemistry.

William Koss, M.D. (U. B. Aires), Assistant Professor of Pathology (Clinical Pathology).

Miroslav Kovacevich, M.D. (Med. Fac., U. Belgrade), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Reginald F. Krause, Ph.D. (U. Rochester), M.D. (U. Vt.), Professor Emeritus of Biochemistry.

Donald W. Kress, M.D. (WVU), Clinical Assistant Professor of Surgery.

Chandra Mohan Kumar, M.B.B.S. (All-India Inst. Med. Sch.), Clinical Assistant Professor of Pediatrics.

Otto J. Kunst, M.D. (U. Miami), Clinical Assistant Professor of Radiology (Diagnostic).

Robert Kusminsky, M.D. (U. B. Aires), Assistant Professor of Surgery, Charleston Division.

David A. Labosky, M.D. (U. Penn.), Assistant Professor of Orthopedic Surgery.

Peter P. Ladewig, M.D. (U. Berlin), Clinical Professor Emeritus of Pathology.

Chi Whang Lai, Ph.D. (Purdue U.), Associate Professor of Radiology (Nuclear Medicine).

Richard F. Lambie, Jr., B.S.P.T. (WVU), Clinical Instructor in Physical Therapy.

Marcel G. Lambrechts, M.D. (Louvaine), Clinical Assistant Professor of Pediatrics.

James W. Lane, M.D. (U. Pitt), Clinical Associate Professor of Urology.

Joyce Lanham, M.S. (U. N.C.), Clinical Instructor in Otolaryngology.

N. LeRoy Lapp, M.D. (Temple U.), Professor of Medicine and Section Chief of Pulmonary Medicine.

David J. Larkin, M.D. (WVU), Clinical Assistant Professor of Anesthesiology.

Norman J. Lass, Ph.D. (Purdue U.), Associate Professor of Otolaryngology.

Derrick L. Latos, M.D. (WVU), Clinical Associate Professor of Medicine (Nephrology).

Gary W. Lawrence, M.D. (Jeff. Med. C.), Clinical Assistant Professor of Pediatrics.

William E. Lawton, Jr., M.D. (U. Va.), Clinical Associate Professor of Surgery.

Robert L. Leadbetter, M.D. (WVU), Clinical Associate Professor of Surgery.

Jo S. Ledwell, Ph.D. (Ohio U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Alberto C. Lee, M.D. (U. Santo Tomas, Manila), Clinical Instructor in Medicine (Comprehensive Medicine).

Chi Meen Lee, M.D. (Kyung-pook U.), Clinical Assistant Professor of Urology.

Chuan Hsiang Lee, M.D. (St. John's U. Med. Sch.-China), Clinical Instructor in Community Medicine.

David P. Lee, M.D. (WVU), Clinical Associate Professor of Medicine (Hematology/Oncology).

Hans Lee, M.D. (Seoul Nat'l. U.), Clinical Assistant Professor of Surgery.

Ping Lee, Ph.D. (Duke U.), Professor of Physiology.

Johnsey L. Leef, M.D. (WVU), Clinical Assistant Professor of Radiology.

Rudolf K. Lemperg, M.D. (U. Graz), Ph.D. (U. Upsala), Professor of Orthopedic Surgery.

Kenneth D. Lempert, M.D. (U. N.C.), Assistant Professor of Medicine (Nephrology).

Sidney C. Lerfald, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Warren D. Leslie, M.D. (Jeff. Med. C.), Clinical Associate Professor of Pediatrics.

Nigel R. Levens, Ph.D. (U. Southampton), Assistant Professor of Physiology.

Arnold J. Levine, Ph.D. (Columbia U.), Adjunct Professor of Behavioral Medicine and Psychiatry.

Robert A. Lewine, M.D. (U. Pitt), Clinical Associate Professor of Pediatrics.

Daniel M. Lewis, Ph.D. (WVU), Adjunct Assistant Professor of Microbiology.

Mary L. Lewis, M.D. (Emory U.), Clinical Professor of Medicine (Nephrology).

Michael J. Lewis, M.D. (WVU), Clinical Assistant Professor of Family Practice.

Robert N. Lewis, M.D. (Case West. Res. U.), Clinical Assistant Professor of Medicine (Comprehensive Medicine).

Josiah K. Lilly, M.D. (WVU), Clinical Associate Professor of Anesthesiology.

Rogello T. Lim, M.D. (U. Santo Tomas, Manila), Clinical Instructor in Medicine (Comprehensive Medicine).

Romeo Y. Lim, M.D. (U. Philippines), Clinical Associate Professor of Otolaryngology.

David J. Lindert, M.D. (U. Ill.), Clinical Assistant Professor of Urology.

Harry T. Linger, M.D. (Med. C. Va.), Clinical Instructor in Ophthalmology.

Robert T. Linger, M.D. (Harvard U.), Clinical Professor of Surgery.

John C. Linton, Ph.D. (Kent St. U.), Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.



Naihsiang Liu, Ph.D. (U. Okla.), Assistant Professor of Radiology (Radiation Safety).  
 Donn A. Livingstone, M.D. (U. British Col.), Clinical Assistant Professor of Otolaryngology.  
 Luis A. Loimil, M.D. (U. B. Aires), Clinical Assistant Professor of Orthopedic Surgery.  
 Malcolm B. Louden, M.D. (WVU), Clinical Assistant Professor of Neurology.  
 Betholene F. Love, Ed.D. (WVU), Professor and Program Director/Education Coordinator of Medical Technology.  
 Richard V. Lynch, M.D. (U. Penn), Clinical Associate Professor of Medicine (Allergy and Clinical Immunology).  
 Lloyd B. McCabe, M.D. (St. Louis U.), Clinical Associate Professor of Medicine (Pulmonary Medicine).  
 Robert E. McCafferty, Ph.D. (U. Pitt), Professor of Anatomy.  
 Michael F. McCagh, M.D. (WVU), Clinical Instructor in Medicine (Dermatology).  
 William T. McClellan, M.D. (WVU), Clinical Instructor in Urology.  
 David C. McClure, M.D. (WVU), Clinical Instructor in Ophthalmology.  
 Kathleen A. McCluskey, Ph.D. (U. Kans.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 D. Verne McConnell, M.D. (Columbia U.), Clinical Professor of Surgery.  
 Lewis H. McConnell, M.D. (WVU), Clinical Assistant Professor of Medicine (Allergy and Clinical Immunology).  
 Arch T. McCoy, M.D. (Med. C. Va.), Clinical Associate Professor of Urology.  
 Bradford McCuskey, M.D. (Jeff. Med. C.), Clinical Associate Professor of Urology.  
 Robert McCuskey, Ph.D. (Case West. Res. U.), Professor and Chairperson of Anatomy.  
 Donald E. McDowell, M.D. (Temple U.), Associate Professor of Surgery.  
 Brittain McJunkin, M.D. (WVU), Clinical Assistant Professor of Medicine (Gastroenterology).  
 Richard McKinley, M.D. (U. Iowa), Clinical Assistant Professor of Obstetrics and Gynecology.  
 William O. McMillan, M.D. (Duke U.), Clinical Professor of Medicine (Gastroenterology).  
 Michael D. McNeer, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Samuel P. McNeill, M.D. (WVU), Clinical Assistant Professor of Family Practice.  
 Joseph J. McPhillips, Ph.D. (Jeff. Med. C.), Adjunct Professor of Pharmacology and Toxicology.  
 Daniel MacCallum, M.D. (U. Ky.), Clinical Assistant Professor of Medicine (Comprehensive Medicine).  
 John P. MacCallum, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Kenneth G. MacDonald, M.D. (Cornell U.), Clinical Associate Professor of Surgery.  
 Alfred J. Magee, M.D. (Long Isl. C. Med.), Clinical Associate Professor of Ophthalmology.  
 Jamal E. Mahin, M.D. (Tehran Med. Sch.), Assistant Professor of Pathology (Clinical).  
 Daniel A. Mairs, M.D. (Duke U.), Clinical Professor of Obstetrics and Gynecology.  
 Tony C. Majestro, M.D. (WVU), Clinical Associate Professor of Orthopedic Surgery.  
 Indira Majumder, M.D. (S.C.B. Med. C.), Clinical Instructor in Pediatrics.  
 Michael A. Malamisura, M.D. (WVU), Assistant Professor of Medicine (Gastroenterology).  
 Paul F. Malone, M.D. (WVU), Clinical Associate Professor of Otolaryngology.  
 Sherry E. Maloney, B.S. (WVU), Clinical Instructor in Physical Therapy.  
 Evelyn W. Manetta, M.D. (WVU), Instructor in Surgery (Emergency Room).  
 Jimmie L. Mangus, M.D. (Med. C. Va.), Clinical Associate Professor of Family Practice.  
 Eric P. Mantz, M.D. (WVU), Clinical Assistant Professor of Surgery.  
 Gary D. Marano, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 John B. Markey, M.D. (Med. C. Va.), Clinical Associate Professor of Surgery.  
 James P. Markham, M.D. (WVU), Clinical Associate Professor of Behavioral Medicine and Psychiatry.  
 Henrietta L. Marquis, M.D. (U. Penn), Clinical Professor of Behavioral Medicine and Psychiatry.  
 Robert Marshall, M.D. (Queen's U.), Clinical Professor of Medicine (Cardiology).  
 James D. Martin, M.D. (Vanderbilt U.), Professor of Neurology.  
 Robert B. Martin, Ph.D. (WVU), Associate Professor of Orthopedic Surgery.  
 Robert W. Martin, M.D. (Hahnemann Med. C.), Associate Professor of Medicine (Behavioral and Ambulatory Medicine), and Assistant Director, University Health Service.  
 Orestes A. Martinez, M.D. (Fac. Med. San Fernando), Associate Professor of Anesthesiology.



Stanley S. Masilamani, M.D. (Stanley Med. C.), Clinical Assistant Professor of Medicine (Gastroenterology).

Terrence L. Mason, B.S. (WVU), Clinical Instructor in Physical Therapy.

Thomas Mathew, M.B.B.S. (Calicut Med. C.), Clinical Assistant Professor of Anesthesiology.

Phillip B. Mathias, M.D. (WVU), Clinical Associate Professor of Otolaryngology.

Michael G. Mawhinney, Ph.D. (WVU), Professor of Urology and Pharmacology and Toxicology.

Ward W. Maxson, M.D. (U. Mich.), Clinical Associate Professor of Obstetrics and Gynecology.

Maureen D. Mayes, M.D. (E. Va. Med. Sch.), Assistant Professor of Medicine (Rheumatology).

Victor E. Mazzocco, M.D. (WVU), Clinical Assistant Professor of Medicine (Metabolism-Endocrinology).

Charles E. Meacci, M.S. (Boston U.), Associate Professor of Physical Therapy.

Catalino B. Mendoza, Jr., M.D. (Manila Central U.), Clinical Professor of Surgery.

Henry F. Mengoli, Ph.D. (Cath. U. Am.), Associate Professor of Microbiology.

John V. Merrifield, M.D. (WVU), Clinical Assistant Professor of Family Practice.

Rachel M. Mignogna, B.S. (U. Pitt), Clinical Instructor in Physical Therapy.

D. Franklin Milam, M.D. (U. Penn), Professor and Chairperson of Urology.

Philip R. Miles, Ph.D. (WVU), Adjunct Professor of Physiology.

Ronald J. Millecchia, Ph.D. (Rockefeller U.), Associate Professor of Physiology.

Lawrance S. Miller, M.D. (U. Va.), Clinical Professor of Orthopedic Surgery.

Michael Miller, Ph.D. (Penn St. U.), Assistant Professor of Biochemistry.

Phyllis Miller, M.S.W. (Purdue U.), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Anthony P. Minard, Cert. P.T. (U. Penn), Clinical Instructor in Physical Therapy.

Lawrence M. Minardi, M.D. (WVU), Clinical Instructor in Ophthalmology.

Dane W. Moore, M.S. (WVU), Professor of Medical Technology.

Robert N. Moore, D.D.S. (Northwestern U.), Ph.D. (U. Rochester), Associate Professor of Anatomy.

Richard Moran, B.S. (WVU), Clinical Assistant Professor of Physical Therapy.

Walter H. Moran, M.D. (Harvard U.), Professor of Surgery and Physiology and Chief of Emergency Services.

Michael Morehead, M.D. (WVU), Clinical Associate Professor of Neurology.

Barbara U. Morgan, M.D. (WVU), Clinical Assistant Professor of Neurology and Pediatrics.

David M. Morgan, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

David Z. Morgan, M.D. (Med. C. Va.), Professor of Medicine (Cardiology) and Behavioral Medicine and Psychiatry; Associate Dean, School of Medicine (Student Affairs).

Edwin J. Morgan, M.D. (U. Pitt), Professor of Medicine (Behavioral and Ambulatory Medicine) and Behavioral Medicine and Psychiatry; Medical Director, University Health Service.

William C. Morgan, M.D. (U. Va.), Clinical Professor of Otolaryngology.

Winfield S. Morgan, M.D. (Temple U.), Professor of Pathology.

Anthony P. Morise, Jr., M.D. (U. Vt.), Assistant Professor of Medicine (Cardiology).

Joseph T. Morris, M.D. (Hahnemann Med. C.), Clinical Associate Professor of Pediatrics.

Abdolsamand Mossahebi, M.D. (U. Tehran), Clinical Instructor in Pediatrics.

Thomas W. Mou, M.D. (U. Rochester), Professor of Community Medicine and Medicine (Comprehensive Medicine); Dean, Charleston Division.

Prasadarao B. Mukkamala, M.B.B.S. (Rangaraya Med. C.), Clinical Assistant Professor of Community Medicine.

Martha K. Mullett, M.D. (WVU), Associate Professor of Pediatrics.

Stephen P. Murphy, B.S. (U. Conn.), Clinical Instructor in Physical Therapy.

Phillip J. Murray, M.B.Ch.B. (U. Cape Town), Assistant Professor of Community Medicine.

David Z. Myerberg, M.D. (Columbia C.), Associate Professor of Pediatrics.

Ganesan Nagarajan, M.D. (Stanley Med. C.), Clinical Assistant Professor of Radiology (Diagnostic).

Lucille D. Nahemow, Ph.D. (Columbia U.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

David L. Namay, M.D. (WVU), Clinical Assistant Professor of Medicine (Cardiology).

Carlos A. Naranjo, M.D. (Med. C., Ecuador), Clinical Assistant Professor of Urology.

Phyllis P. Nash, M.S.W. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.

LaRee D. Naviaux-D'Abreo, Ph.D. (Duquesne U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

William A. Neal, M.D. (WVU), Professor of Pediatrics and Section Chief of Pediatric Cardiology.

Lee L. Neilan, M.D. (Georgetown U.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Bruce N. Nelson, M.D. (WVU), Assistant Professor of Medicine (Comprehensive Medicine).

Charles T. Nelson, M.S. (WVU), Instructor in Otolaryngology.

Roger M. Nelson, Ph.D. (U. Iowa), Adjunct Associate Professor of Physical Therapy.

William R. Nelson, Ph.D. (U. Chicago), Associate Professor of Pathology (Clinical Pathology).

David Nesselroade, M.D. (WVU), Assistant Professor of Family Practice.

Ralph H. Nestmann, M.D. (Ind. U.), Clinical Associate Professor of Medicine (Comprehensive Medicine).

Benjamin Newman, M.D. (U. Beirut), Clinical Associate Professor of Family Practice.

Roger P. Nichols, M.D. (WVU), Clinical Associate Professor of Otolaryngology.

William E. Noble, M.D. (U. Pitt), Clinical Assistant Professor of Medicine, Wheeling Division.

William L. Noble, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).

G. Robert Nugent, M.D. (U. Cincin.), Professor and Chairperson of Neurological Surgery.

Milton E. Nugent, M.D. (Rush Med. C., U. Chicago), Clinical Associate Professor of Ophthalmology.

Robert E. O'Connor, M.D. (Harvard U.), Clinical Associate Professor of Ophthalmology.

Morris H. O'Dell, M.D. (Med. C. Va.), Clinical Professor of Surgery.

Michael V. O'Keefe, M.D. (WVU), Assistant Professor of Medicine (Cardiology).

Stephen A. Olenchock, Ph.D. (WVU), Adjunct Associate Professor of Microbiology.

Anthony J. Oliverio, M.D. (WVU), Clinical Associate Professor of Otolaryngology.

William W. Orr, Jr., M.D. (Med. C. Ga.), Assistant Professor of Behavioral Medicine and Psychiatry, and Medicine (Behavioral and Ambulatory Medicine.)

R. Wade Ortel, M.D. (U. Md.), Professor of Medicine, Wheeling Division.

Dennis O. Overman, Ph.D. (U. Mich.), Associate Professor of Anatomy.

Bernadette R. Page, M.D. (Loyola-Stritch Sch. Med.), Clinical Assistant Professor of Surgery.

John R. Page, M.D. (Loyola-Stritch Sch. Med.), Clinical Assistant Professor of Surgery.

Albert Paine, M.D. (Med. C. Va.), Clinical Associate Professor of Otolaryngology.

Antonio Palladino, M.D. (U. Naples), Clinical Professor of Obstetrics and Gynecology.

David W. Palmer, M.D. (U. Md.), Clinical Assistant Professor of Urology.

Jan E. Palmer, M.D. (SUNY), Assistant Professor of Family Practice and Physician, University Health Service.

Louis C. Palmer, M.D. (WVU), Clinical Associate Professor of Medicine (Dermatology).

Mahesh R. Pandya, M.B.B.S. (B. J. Med. C., Ahmedabad, India), Clinical Assistant Professor of Medicine (Hematology/Oncology).

Joseph V. Panepinto, Ph.D. (WVU), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Ruth Panepinto, Ph.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Rizal V. Pangilinan, M.D. (Manila Central U.), Clinical Assistant Professor of Ophthalmology.

Undong Park, M.D. (Kyung-pook U.), Clinical Assistant Professor of Obstetrics and Gynecology.

William F. Park, M.D. (U. Md.), Clinical Assistant Professor of Ophthalmology.

Patrick J. Parks, Ph.D., M.D. (Case West. Res. U.), Clinical Assistant Professor of Pathology.

Nolan C. Parsons, M.D. (WVU), Clinical Assistant Professor of Medicine (Dermatology).

Richard S. Pataki, M.D. (N.Y. Med. C.), Clinical Assistant Professor of Pathology.

Robert Patchell, M.D. (U. Toronto), Professor and Chief of Obstetrics and Gynecology, Charleston Division.

Amulakh M. Patel, M.D. (M. P. Shah Med. Sch.), Clinical Instructor in Surgery.

Mahendrakumbar M. Patel, M.D. (Med. C. Baroda), Clinical Assistant Professor of Medicine (Pulmonary Medicine).

Ashok S. Patil, M.B.B.S. (U. Ranchi), Adjunct Assistant Professor of Community Medicine.

Larry L. Patrick, M.D. (U. Ark.), Assistant Professor of Anesthesiology.

Joseph R. Patterson, M.D. (Tulane U.), Clinical Assistant Professor of Radiology (Diagnostic).

Denzil Patton, M.D. (WVU), *Clinical Assistant Professor of Family Practice.*  
 Ross M. Patton, M.D. (WVU), *Clinical Instructor in Community Medicine.*  
 Thompson E. Percy, M.D. (WVU), *Instructor in Obstetrics and Gynecology, Charleston Division.*  
 R. John C. Pearson, M.D. (Cambridge U.), *Professor and Chairperson of Community Medicine and Professor of Family Practice.*  
 Thomas S. Peck, M.D. (Geo. Wash. U.), *Clinical Instructor in Family Practice.*  
 Tom H. Pepper, M.D. (Baylor U.), *Associate Professor and Assistant Chairperson of Behavioral Medicine and Psychiatry.*  
 Terry R. Perrine, M.D. (Med. C. Va.), *Assistant Professor of Family Practice, Charleston Division.*  
 John J. Petronis, M.S. (WVU), *Associate Professor of Physical Therapy.*  
 Edward L. Petsonk, M.D. (McGill U.), *Assistant Professor of Medicine (Pulmonary Medicine).*  
 Alfred H. Pfister, M.D. (Ind. U.), *Clinical Professor of Medicine (Comprehensive Medicine).*  
 Ruth M. (Trotter) Phillips, M.D. (Johns Hopkins U.), *Associate Professor of Pediatrics.*  
 Justus C. Pickett, M.D. (Case West. Res. U.), *Professor Emeritus of Orthopedic Surgery.*  
 Carlin A. Pinkstaff, Ph.D. (Emory U.), *Professor of Anatomy.*  
 Betty S. Pittman, M.A. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Arthur L. Poffenbarger, M.D. (U. Md.), *Clinical Professor of Neurology.*  
 Robert B. Point, M.D. (U. Va.), *Clinical Associate Professor of Medicine (Dermatology).*  
 W. Warren Point, M.D. (Harvard U.), *Professor and Assistant Chairperson of Medicine; Chief of Medicine, Charleston Division; Associate Dean, School of Medicine, Charleston Division.*  
 Edward P. Polack, M.D. (WVU), *Clinical Assistant Professor of Surgery.*  
 Herbert H. Pomerance, M.D. (Columbia U.), *Professor and Chief of Pediatrics, Charleston Division.*  
 Charles D. Ponte, Pharm.D. (U. Utah), *Assistant Professor of Family Practice.*  
 Thomas R. Poole, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Robert Pope, Ph.D. (U. N. Dak.), *Associate Professor of Anatomy.*  
 Robert S. Pore, Ph.D. (UCLA), *Associate Professor of Microbiology.*  
 Alexius T. Portz, Ph.D. (U. Mich.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Thomas G. Potterfield, M.D. (Med. C. Va.), *Clinical Professor of Pediatrics.*  
 Donald L. Powell, M.D. (WVU), *Clinical Instructor in Medicine (Comprehensive Medicine).*  
 Jeffrey A. Powelson, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Roxann L. Powers, M.D. (WVU), *Assistant Professor of Medicine (Comprehensive Medicine).*  
 Lee H. Pratt, M.D. (WVU), *Clinical Associate Professor of Neurology.*  
 James M. Previll, M.D. (WVU), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*  
 Kathleen Previll, M.D. (WVU), *Clinical Assistant Professor of Pediatrics.*  
 Jack Pushkin, M.D. (WVU), *Clinical Associate Professor of Orthopedic Surgery.*  
 Willard Pushkin, M.D. (Med. C. Va.), *Clinical Professor Emeritus of Medicine.*  
 Gina M. Puzzuoli, M.D. (WVU), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.*  
 Eugene A. Quarrick, Ph.D. (Syracuse U.), *Professor of Behavioral Medicine and Psychiatry.*  
 Jean Rabovsky, Ph.D. (Brandeis U.), *Adjunct Assistant Professor of Biochemistry.*  
 Eric L. Radin, M.D. (Harvard U.), *Professor and Chairperson of Orthopedic Surgery.*  
 Gary T. Raflo, M.D. (U. Va.), *Assistant Professor of Ophthalmology.*  
 Gale W. Rafter, Ph.D. (U. Wash.), *Professor of Biochemistry.*  
 Ahmad Rahbar, M.D. (U. Mich.), *Clinical Associate Professor of Surgery.*  
 Peter C. Raich, M.D. (U. Wisc.), *Professor of Medicine and Section Chief of Hematology/Oncology.*  
 Desingu Raja, M.B.B.S. (U. Madras), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Arunthathie Rajaratham, M.B.B.S. (U. Ceylon), *Clinical Assistant Professor of Anesthesiology.*  
 Vadrevu K. Raju, M.B.B.S. (Andhira Med. C.), *Associate Professor of Ophthalmology.*  
 Humayun Rashid, M.B.B.S. (U. Panjab), *Clinical Assistant Professor of Surgery.*  
 Richard C. Rashid, M.D. (WVU), *Clinical Associate Professor of Family Practice and Clinical Assistant Professor of Ophthalmology.*  
 Gerald A. Ravitz, M.D. (WVU), *Clinical Assistant Professor of Urology.*



Kenneth Reamy, M.D. (Tufts U.), Associate Professor of Obstetrics and Gynecology and Behavioral Medicine and Psychiatry.

Mark J. Reasor, Ph.D. (Johns Hopkins U.), Associate Professor of Pharmacology and Toxicology.

Keith A. Recht, M.D. (WVU), Clinical Instructor in Urology.

Robert W. Rectenwald, M.D. (WVU), Clinical Assistant Professor of Medicine (Comprehensive Medicine).

Gurijala N. Reddy, M.B.B.S. (Kakatiya Med. C.), Clinical Assistant Professor of Radiology (Radiation Therapy).

Joseph B. Reed, M.D. (WVU), Clinical Assistant Professor of Family Practice.

Robert J. Reed, M.D. (U. Penn.), Clinical Assistant Professor of Surgery.

Frank D. Reilly, Ph.D. (U. Cincin.), Associate Professor of Anatomy.

Judy Reimanis, M.Ed. (U. Pitt), Clinical Instructor in Physical Therapy.

Larry G. Reimer, M.D. (U. Colo.), Assistant Professor of Pathology and Medicine (Infectious Diseases).

Martin D. Reiter, M.D. (Jeff. Med. C.), Clinical Professor of Medicine (Allergy and Clinical Immunology).

Dorothy A. Renick, M.S.W. (WVU), Adjunct Instructor in Behavioral Medicine and Psychiatry, Charleston Division.

Ole W. Renick, M.D. (Med. C. Va.), Clinical Assistant Professor of Otolaryngology.

Harold Resnick, Ph.D. (U. Iowa), Adjunct Professor of Biochemistry.

William C. Revercomb, M.D. (Columbia U.), Clinical Associate Professor of Medicine (Comprehensive Medicine).

Randall W. Reyer, Ph.D. (Yale U.), Professor of Anatomy.

Joung Wye Rhee, M.D. (Seoul Nat'l. U.), Clinical Assistant Professor of Pediatrics.

Jack E. Riggs, M.D. (U. Rochester), Assistant Professor of Neurology.

Roger S. Riley, M.D. (WVU), Assistant Professor of Pathology.

Thomas L. Ritz, M.D. (WVU), Clinical Assistant Professor of Family Practice.

Samuel K. Roberts, M.D. (WVU), Clinical Assistant Professor of Family Practice.

Timothy G. Roberts, M.D. (So. Ill. U.), Assistant Professor of Behavioral Medicine and Psychiatry.

Patrick A. Robinson, M.D. (Wayne St. U.), Assistant Professor of Medicine, Charleston Division.

Robert L. Robinson, Ph.D. (U. Kans.), Professor of Pharmacology and Toxicology.

Joan Robison, Ph.D. (U. Ga.), Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Satyabhilashi P. Rochlani, M.B.B.S. (U. Madras), Associate Professor of Pathology.

Jeanne A. Rodman, M.D. (U. Iowa), Clinical Professor of Anesthesiology.

Nathaniel F. Rodman, M.D. (U. Penn.), Professor and Chairperson of Pathology.

Clinton L. Rogers, M.D. (U. Md.), Clinical Associate Professor of Radiology (Diagnostic).

John S. Rogers, M.D. (Geo. Wash. U.), Associate Professor of Medicine (Hematology/Oncology).

Mohammad Roidad, M.B.B.S. (Khyber Med. C., Peshawar U.), Clinical Assistant Professor of Medicine (Gastroenterology).

Carl J. Roncaglione, M.D. (Med. C. Va.), Clinical Professor of Orthopedic Surgery.

Stanley G. Rosenblatt, M.D. (Jeff. Med. C.), Clinical Assistant Professor of Radiology (Diagnostic).

William Rossman, M.D. (Ind. U.), Clinical Professor of Behavioral Medicine and Psychiatry.

Raymond O. Rushdin, M.D. (U. Cairo), Instructor in Surgery, Charleston Division.

Ralph W. Ryan, M.D. (U. Mich.), Clinical Professor of Ophthalmology.

Francis M. Saldanha, M.B.B.S. (Stanley Med. C.), Clinical Instructor in Anesthesiology.

William Sale, M.D. (U. Va.), Clinical Associate Professor of Orthopedic Surgery.

Robert S. Salisbury, M.D. (WVU), Clinical Assistant Professor of Pathology.

Ujjal S. Sandhu, M.B.B.S. (Calcutta Nat'l. Med. Inst.), Clinical Assistant Professor of Obstetrics and Gynecology.

Michael A. Santer, M.D. (Georgetown U.), Clinical Professor of Medicine (Cardiology).

David A. Santrock, M.D. (WVU), Clinical Assistant Professor of Orthopedic Surgery.

Darrell F. Saunders, M.D. (WVU), Clinical Instructor in Medicine (Hematology/Oncology).

Dennis F. Saver, M.D. (Med. C. Pa.), Clinical Instructor in Family Practice.

Paul D. Saville, M.D. (St. Geo. Med. Sch., London), Clinical Professor of Medicine (Rheumatology).

Ronald A. Savrin, M.D. (SUNY—Upstate), Associate Professor of Surgery.

Eric H. Sawitz, M.D. (Boston U.), Clinical Instructor in Medicine (Comprehensive Medicine).

John J. Schaefer, M.D. (N.Y. Med. C.), Clinical Associate Professor of Surgery.



Allen H. Schaeffer, M.D. (Johns Hopkins U.), Clinical Assistant Professor of Medicine (Comprehensive Medicine).

Jane L. Schapman, B.S. (Wash. U.), Clinical Instructor in Physical Therapy.

Martin W. Schein, Sc.D. (Johns Hopkins U.), Clinical Professor of Behavioral Medicine and Psychiatry.

Martin F. Scheinholtz, M.D. (Penn St. U.), Clinical Assistant Professor of Anesthesiology.

Franklin G. Schiebel, M.D. (U. Mex.), Assistant Professor of Anesthesiology and Neurological Surgery.

Sydney S. Schochet, Jr., M.D. (Tulane U.), Professor of Pathology, Neurology and Neurological Surgery.

Larry T. Schwab, M.D. (WVU), Assistant Professor of Ophthalmology.

Jeffrey K. Schwarz, B.S. (WVU), Clinical Instructor in Physical Therapy.

Ronald R. Scobbo, M.D. (WVU), Clinical Associate Professor of Medicine (Comprehensive Medicine).

Ralph T. Scott, M.D. (St. U. Iowa), Clinical Associate Professor of Behavioral Medicine and Psychiatry.

Richard J. Seime, Ph.D. (U. Minn.), Associate Professor of Behavioral Medicine and Psychiatry.

Harold Selinger, M.D. (N.Y. St. U. C. Med.), Clinical Professor of Medicine (Cardiology).

Martin J. Sepulveda, M.D. (Harvard U.), Adjunct Instructor in Medicine (Pulmonary Medicine).

Jose M. Serrato, M.D. (U. Nat'l. Colombia), Clinical Assistant Professor of Urology.

Edmund G. Settle, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Hong I. Seung, M.D. (Seoul Nat'l. U.), Clinical Assistant Professor of Otolaryngology.

James K. Sexton, M.D. (Wake Forest U.), Clinical Associate Professor of Radiology (Diagnostic).

Samir Shabb, M.D. (Am. U. Beirut), Clinical Associate Professor of Surgery.

Tahir Shafi, M.B.B.S. (Nuhtar Med. C.), Clinical Assistant Professor of Medicine (Nephrology).

Stanley R. Shane, M.D. (U. Kans.), Professor of Medicine; Section Chief of Metabolism and Endocrinology; Associate Chairperson, Department of Medicine.

Harry L. Shannon, M.D. (Tulane U.), Clinical Assistant Professor of Urology.

Anne W. Sharpe, B.S. (WVU), Associate Professor of Medical Technology.

George Shawkey, M.D. (Northwestern U.), Clinical Associate Professor of Pediatrics.

Thomas K. Shehan, D.V.M. (Ohio St. U.), Associate Professor of Pathology and Coordinator of Comparative Pathology (Animal Quarters).

George W. Shehl, M.D. (WVU), Clinical Assistant Professor of Medicine (Cardiology).

Edwin M. Shepherd, M.D. (Cornell U.), Clinical Associate Professor of Ophthalmology.

Lauralee Sherwood, D.V.M. (Mich. St. U.), Associate Professor of Physiology.

Jeffrey S. Shultz, M.D. (WVU), Associate Professor of Medicine and Chief of Medicine, Wheeling Division.

Richard H. Sibley, M.D. (WVU), Clinical Assistant Professor of Orthopedic Surgery.

Leslie Simmons, M.D. (Tulane U.), Clinical Professor of Family Practice.

William P. Sinclair, M.D. (Med. C. Va.), Clinical Associate Professor of Family Practice.

Wilbur Z. Sine, M.D. (WVU), Clinical Assistant Professor of Family Practice and Behavioral Medicine and Psychiatry.

Purendra Sinha, M.B.B.S. (Patna Med. C.—India), Associate Professor of Radiology (Radiation Therapy).

Joseph T. Skaggs, M.D. (U. Louisville), Clinical Professor of Medicine (Allergy and Clinical Immunology).

Garry S. Sklar, M.D. (N.Y. Med. C.), Associate Professor of Anesthesiology.

John M. Slack, Ph.D. (U. Minn.), Professor Emeritus of Microbiology.

Stephen T. Slack, Ph.D. (Penn St. U.), Associate Professor of Radiology and Section Chief of Radiation Safety.

David H. Smith, M.D. (U. Alberta), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

David J. Smith, Ph.D. (WVU), Professor of Anesthesiology and Pharmacology and Toxicology.

James T. Smith, M.D. (U. Kans.), Clinical Associate Professor of Radiology (Diagnostic).

Larry C. Smith, M.D. (Med. C. Va.), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.

Ralph S. Smith, M.D. (Northwestern U.), Clinical Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division.

Robert Leslie Smith, M.D. (U. Ill.), Associate Professor and Assistant Chairperson of Community Medicine; Assistant Dean, School of Medicine (Continuing Education).

Cynthia M. Smorto, B.S. (U. Penn), *Clinical Instructor in Physical Therapy.*  
 George E. Snider, M.D. (WVU), *Clinical Instructor in Otolaryngology.*  
 Irvin S. Snyder, Ph.D. (U. Kans.), *Professor and Chairperson of Microbiology.*  
 Irvin M. Sopher, M.D. (U. Md.), *Clinical Professor of Pathology.*  
 William G. Sorenson, Ph.D. (U. Tex., Austin), *Adjunct Assistant Professor of Microbiology.*  
 Bradley A. Soule, M.D. (U. Vt.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Suzanne S. Souther, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 John B. Spadafore, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 James T. Spencer, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Otolaryngology.*  
 Frederick Sporck, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology.*  
 Philip M. Sprinkle, M.D. (U. Va.), *Professor and Chairperson of Otolaryngology.*  
 David J. Srebalus, Ed.D. (Ind. U.), *Clinical Associate Professor of Behavioral Medicine and Psychiatry.*  
 Charles Staab, M.D. (U. Pitt), *Clinical Assistant Professor of Pediatrics.*  
 Edwin P. Stabins, M.D. (Cornell U.), *Clinical Professor of Pediatrics.*  
 Michael Staggers, B.S.P.T. (WVU), *Clinical Assistant Professor of Physical Therapy.*  
 Ellen F. Starkey, M.S.W. (WVU), *Clinical Instructor in Behavioral Medicine and Psychiatry.*  
 William T. Stauber, Ph.D. (Rutgers U.), *Associate Professor of Physiology.*  
 Vilja K. Stein, M.D. (U. Penn), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry.*  
 Larry J. Stemple, M.D. (WVU), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Margaret Stemple, M.D. (Rush Med. C., U. Chicago), *Clinical Assistant Professor of Family Practice.*  
 James M. Stevenson, M.D. (WVU), *Professor and Chairperson of Behavioral Medicine and Psychiatry; Professor of Medicine and Section Chief of Behavioral and Ambulatory Medicine.*  
 J. Clifford Stickney, Ph.D. (U. Minn.), *Professor Emeritus of Physiology.*  
 Robert E. Stitzel, Ph.D. (U. Minn.), *Professor and Associate Chairperson of Pharmacology and Toxicology.*  
 Terrance J. Stobbe, Ph.D. (U. Mich.), *Adjunct Assistant Professor of Physical Therapy.*  
 David A. Stoll, M.D. (U. Iowa), *Clinical Assistant Professor of Orthopedic Surgery.*  
 Jerilyn Stone, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Robert E. Stone, M.D. (Med. C. Va.), *Clinical Associate Professor of Obstetrics and Gynecology.*  
 Eileen Storey, M.D. (Harvard U.), *Adjunct Assistant Professor of Medicine (Comprehensive Medicine).*  
 Wade B. Stoughton, M.D. (WVU), *Clinical Assistant Professor of Urology.*  
 Carol Ann Strasser, B.S. (WVU), *Clinical Instructor in Physical Therapy.*  
 Robert S. Strauch, M.D. (Case West. Res. U.), *Clinical Instructor in Surgery.*  
 William D. Strauch, M.D. (WVU), *Clinical Assistant Professor of Ophthalmology.*  
 Samuel A. Strickland, M.D. (WVU), *Clinical Assistant Professor of Ophthalmology.*  
 Neil Stronach, M.D. (Med. C. Va.), *Clinical Instructor in Otolaryngology.*  
 Ronald K. Stupar, M.D. (WVU), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Jackie L. Summers, M.D. (WVU), *Clinical Professor of Urology.*  
 John A. Surmonte, M.D. (Jeff. Med. C.), *Clinical Associate Professor of Surgery.*  
 Eduardo M. Suson, M.D. (Cebu Inst. Med.), *Clinical Assistant Professor of Surgery.*  
 Mary C. Sutherland, R.N. (St. Mary's Sch. Nsg.), *Instructor in Pediatrics.*  
 David E. Swanson, M.D. (U. Wash.), *Clinical Assistant Professor of Ophthalmology.*  
 Marc A. Swanson, M.D. (WVU), *Instructor in Surgery (Emergency Room).*  
 Ronald A. Swanson, M.D. (U. Minn.), *Assistant Professor of Pathology.*  
 Sherri L. Swenson, B.S. (Ohio St. U.), *Clinical Instructor in Physical Therapy.*  
 Sally H. Swisher, M.D. (WVU), *Clinical Assistant Professor of Neurology.*  
 Zoltan Szalontay, M.D. (U. Zagreb), *Clinical Associate Professor of Radiology.*  
 Ellen Szego, M.D. (U. Montpellier—France), *Clinical Assistant Professor of Pediatrics.*  
 Gabriel G. Szego, M.D. (U. Montpellier—France), *Clinical Assistant Professor of Medicine (Comprehensive Medicine).*  
 Ernesto Tanguilig, M.D. (U. Philippines), *Clinical Assistant Professor of Radiology (Diagnostic).*  
 Muhib S. Tarakji, M.D. (Am. U. Beirut), *Clinical Assistant Professor of Ophthalmology.*  
 Thomas J. Tarnay, M.D. (Columbia U.), *Professor of Surgery.*  
 Luis Teba, M.D. (U. Granada Med. Sch.—Spain), *Assistant Professor of Anesthesiology.*  
 Jamshia Tehranzadeh, M.D. (Pahlavi U.), *Assistant Professor of Radiology (Diagnostic).*  
 Mary Ellen Tekieli, Ph.D. (U. Okla.), *Clinical Assistant Professor of Otolaryngology.*  
 Erdogan Tercan, M.D. (Ankara U.), *Clinical Associate Professor of Anesthesiology.*

Ganpat G. Thakker, M.B.B.S. (Octover-India), *Clinical Assistant Professor of Medicine (Comprehensive Medicine)*.  
 Frederic L. Theierl, P.T.Cert. (U. Penn), *Clinical Instructor in Physical Therapy*.  
 Paul R. Thomas, M.S. (Case West. Res. U.), *Adjunct Instructor in Community Medicine*.  
 Herbert Thompson, Ph.D. (U. Kans.), *Associate Professor and Assistant Chairperson of Microbiology*.  
 Robert C. Thompson, M.D. (WVU), *Clinical Instructor in Anesthesiology*.  
 Stephen Thorngate, M.D. (Case-West. Res. U.), *Clinical Associate Professor of Surgery*.  
 Lawrence B. Thrush, Jr., M.D. (WVU), *Clinical Associate Professor of Medicine (Allergy and Clinical Immunology)*.  
 Lawrence B. Thrush, Sr., M.D. (U. Penn), *Clinical Instructor in Surgery*.  
 Peter K. Thrush, M.D., (WVU), *Clinical Assistant Professor of Orthopedic Surgery*.  
 Louis W. Tinnin, M.D. (U. Chicago), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 George E. Toma, Jr., M.D. (Ohio St. U.), *Clinical Assistant Professor of Ophthalmology*.  
 Joseph B. Touma, M.D. (Damascus U.), *Clinical Assistant Professor of Otolaryngology*.  
 Shirley Willis Trammell, M.D. (Tulane U.), *Clinical Assistant Professor of Surgery*.  
 Donald C. Trapp, M.D. (Temple U.), *Clinical Associate Professor of Urology*.  
 John W. Traubert, M.D. (Ohio St. U.), *Professor and Chairperson of Family Practice*.  
 John W. Trenton, M.D. (U. Penn), *Clinical Professor of Surgery*.  
 Robert R. Trotter, M.D. (Temple U.), *Professor Emeritus of Ophthalmology*.  
 George P. Tryfiates, Ph.D. (Rutgers U.), *Associate Professor of Biochemistry*.  
 Kevin Kuen-Ching Tu, Ph.D. (Utah St. U.), *Adjunct Assistant Professor of Pathology*.  
 Pat A. Tuckwiller, M.D. (U. Chicago), *Clinical Professor Emeritus of Medicine*.  
 Christopher C. Tully, M.D. (Med. C. Va.), *Professor Emeritus of Family Practice*.  
 Irma H. Ullrich, M.D. (U. Minn.), *Associate Professor of Medicine (Metabolism-Endocrinology) and Physician, University Health Service*.  
 Isidro P. Uy, M.D. (U. Santo Tomas), *Clinical Instructor in Pediatrics*.  
 Albert M. Valentine, M.D. (WVU & Med. C. Va.), *Clinical Associate Professor of Medicine (Cardiology)*.  
 Velayudhan Vallyathan, Ph.D. (Maharaja Satyriaroa U.), *Adjunct Assistant Professor of Pathology*.  
 Knox Van Dyke, Ph.D. (St. Louis U.), *Professor of Pharmacology and Toxicology*.  
 Robert T. Van Uden, Jr., M.D. (U. Wash.), *Clinical Assistant Professor of Orthopedic Surgery*.  
 Thomas Vargish, M.D. (NYU), *Associate Professor of Surgery*.  
 Angel Vasquez, M.D. (U. Puerto Rico), *Professor of Family Practice and Pediatrics*.  
 Carlos Vasquez, M.D. (U. Nacional), *Clinical Assistant Professor of Medicine Hematology/Oncology*.  
 John S. Veach, M.D. (WVU), *Assistant Professor of Surgery and Director of the Emergency Room*.  
 Alfredo C. Velasquez, M.D. (U. Santo Tomas), *Clinical Associate Professor of Surgery*.  
 Richard J. Venjohn, Ph.D. (Purdue U.), *Clinical Assistant Professor of Behavioral Medicine and Psychiatry*.  
 Purushattam L. Verma, M.D. (Nagpur U.), *Clinical Assistant Professor of Pediatrics*.  
 Herbert G. Voelz, Dr.Rer.Nat. (U. Greifswald, Ger.), *Professor of Microbiology*.  
 Edward Voss, Jr., M.D. (U. Buffalo), *Clinical Associate Professor of Surgery*.  
 Thomas C. Wack, M.D. (WVU), *Clinical Instructor in Family Practice*.  
 John A. Wade, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology*.  
 Gregory R. Wagner, M.D. (A. Einstein C. Med.), *Clinical Instructor in Community Medicine*.  
 Donald M. Wald, M.D. (U. Kans.), *Associate Professor of Radiology (Diagnostic)*.  
 Robert H. Waldman, M.D. (Wash. U., St. Louis), *Professor and Chairperson of Medicine and Professor of Behavioral Medicine and Psychiatry*.  
 David K. Walker, M.D. (WVU), *Associate Professor of Behavioral Medicine and Psychiatry, Charleston Division*.  
 Elizabeth R. Walker, Ph.D. (WVU), *Associate Professor of Anatomy*.  
 James H. Walker, M.D. (U. Md.), *Clinical Professor of Surgery*.  
 Lynetta A. Walker, B.S. (U. Pitt), *Clinical Instructor in Physical Therapy*.  
 Robert L. Walker, Jr., M.D. (Meharry Med. C.), *Clinical Instructor in Anesthesiology*.  
 Richard A. Wallace, M.D. (WVU), *Clinical Assistant Professor of Otolaryngology*.  
 H. Alexander Wanger, M.D. (WVU), *Clinical Assistant Professor of Obstetrics and Gynecology*.  
 Stephen D. Ward, M.D. (U. Pitt), *Clinical Associate Professor of Behavioral Medicine and Psychiatry*.  
 Herbert E. Warden, M.D. (U. Chicago), Ph.D. (U. Ill.), *Professor of Surgery*.  
 Carolyn S. Warren, M.D. (Case West. Res. U.), *Clinical Assistant Professor of Family Practice and Medicine (Comprehensive Medicine)*.  
 Stafford G. Warren, M.D. (U. Rochester), *Clinical Professor of Medicine (Cardiology)*.



Thomas L. Warren, M.D. (WVU), Assistant Professor of Anesthesiology.  
 Alvin L. Watne, M.D. (U. Ill.), Professor and Chairperson of Surgery and Professor of Behavioral Medicine and Psychiatry.  
 Carol J. Weaver, M.S. (U. Mo.—KC), Associate Professor of Physical Therapy.  
 Deleno Webb, M.D. (WVU), Clinical Assistant Professor of Behavioral Medicine and Psychiatry.  
 Kenneth C. Weber, Ph.D. (U. Minn.), Adjunct Professor of Pharmacology and Toxicology.  
 Harry S. Weeks, Jr., M.D. (U. Md.), Clinical Professor of Anesthesiology.  
 George W. Weinstein, M.D. (SUNY), Professor and Chairperson of Ophthalmology.  
 Charles C. Weise, M.D. (U. Penn), Clinical Professor of Behavioral Medicine and Psychiatry.  
 Roland J. Weisser, Jr., M.D. (WVU), Associate Professor of Family Practice.  
 William A. Welton, M.D. (U. Md.), Professor of Medicine and Section Chief of Dermatology.  
 Theodore P. Werblin, M.D. (NYU), Clinical Assistant Professor of Ophthalmology.  
 Martin S. Wershba, M.D. (Georgetown U.), Clinical Assistant Professor of Radiology (Diagnostic).  
 Robert T. Westmoreland, M.D. (Bowman Gray Sch. Med.), Clinical Assistant Professor of Anesthesiology.  
 Edward R. Wheatley, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 Charles E. Whitaker, M.D. (U. Pitt), Clinical Associate Professor of Otolaryngology.  
 Frederick C. Whittier, M.D. (Loyola U.), Professor of Medicine and Section Chief of Nephrology.  
 Kenneth L. Wible, M.D. (Jeff. Med. C.), Associate Professor of Pediatrics.  
 Daniel Wierda, Ph.D. (U. Kans.), Assistant Professor of Pharmacology and Toxicology.  
 David W. Wilder, M.D. (U. Ore.), Clinical Associate Professor of Radiology (Diagnostic).  
 Isaiah A. Wiles, M.D. (U. Chi.), Clinical Associate Professor Emeritus of Community Medicine.  
 James H. Wiley, M.D. (Med. C. Va.), Clinical Professor of Orthopedic Surgery.  
 Ronald L. Wilkinson, M.D. (WVU), Clinical Assistant Professor of Otolaryngology.  
 Deborah Willard, M.D. (WVU), Assistant Professor of Radiology (Diagnostic).  
 David H. Williams, M.D. (Cornell U.), Clinical Associate Professor of Radiology (Diagnostic).  
 Karen C. Williams, B.S. (WVU), Clinical Instructor in Physical Therapy.  
 Patricia W. Williams, M.D. (WVU), Assistant Professor of Behavioral Medicine and Psychiatry.  
 Patrick C. Williams, M.D. (Med. C. Va.), Clinical Associate Professor of Obstetrics and Gynecology.  
 T. Walley Williams, Ph.D. (U. Pitt), Professor Emeritus of Anatomy.  
 Robert S. Wilson, M.D. (Johns Hopkins U.), Clinical Assistant Professor of Orthopedic Surgery.  
 Mary J. Wimmer, Ph.D. (U. N.C.), Assistant Professor of Biochemistry.  
 Mosley H. Winkler, M.D. (Med. C. Va.), Clinical Associate Professor of Ophthalmology.  
 George H. Wirtz, Ph.D. (Geo. Wash. U.), Professor of Biochemistry.  
 David J. Withersty, M.D. (WVU), Clinical Professor of Behavioral Medicine and Psychiatry.  
 Loraine Withersty, M.D. (WVU), Clinical Associate Professor of Obstetrics and Gynecology.  
 John J. Wolf, Jr., M.D. (Wake Forest U.), Clinical Assistant Professor of Pediatrics.  
 Judith A. Wolfe, M.D. (Med. C. Pa.), Clinical Assistant Professor of Otolaryngology.  
 Diane T. Woodrum, Ed.D. (WVU), Adjunct Assistant Professor of Pediatrics.  
 David Wright, M.D. (WVU), Clinical Assistant Professor of Medicine (Comprehensive Medicine).  
 Barbara Lea H. Wrubel, B.S. (WVU), Clinical Instructor in Physical Therapy.  
 Donald F. Wuori, M.D. (SUNY—Downstate), Associate Professor of Pediatrics.  
 William D. Wyant, M.S.E., M.P.A. (WVU), Assistant Professor of Community Medicine.  
 Merrill Wymer, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 David B. Yelton, Ph.D. (U. Mass.), Associate Professor of Microbiology.  
 Jeffrey M. Yost, M.D. (WVU), Clinical Assistant Professor of Radiology (Diagnostic).  
 George L. Zaldívar, M.D. (WVU), Clinical Associate Professor of Medicine (Pulmonary Medicine).  
 John J. Zarski, Ph.D. (Ohio U.), Clinical Associate Professor of Behavioral Medicine and Psychiatry.  
 John F. Zeedick, M.D. (U. Pitt), Clinical Professor of Anesthesiology.  
 Steve M. Zekan, M.D. (WVU), Instructor in Surgery, Charleston Division.  
 Barry L. Zimmerman, M.D. (Penn St. U.), Associate Professor of Anesthesiology.

## School of Nursing

Brenda Kay Battles, R.N., M.S. (Tex. Wom. U.), *Instructor*.  
 Shirley K. Bell, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.  
 Joan L. Bilitski, R.N., M.S.N. (WVU), *Assistant Professor*.  
 Mary Frances Borgman, R.N., Ed.D. (WVU), *Professor*.  
 Margaret Anne Burkhardt, R.N., M.S.N. (U. Rochester), *Assistant Professor, Charleston Unit*.  
 Mary Jo Butler, R.N., M.S. (U. Md.), *Associate Professor; Chairperson, Charleston Unit*.  
 Marie E. Caruso, R.N., M.S. (U. Ariz.), *Instructor*.  
 Doris K. Clearage, R.N., M.S. (U. Ariz.), *Assistant Professor*.  
 Mona M. Counts, R.N., Ph.D. (U. Tex.), *Associate Professor*.  
 Pamela M. Deiriggi, R.N., M.S.N. (WVU), *Instructor*.  
 Patricia A. Diehl, R.N., M.A. (WVU), *Associate Professor*.  
 Imogene P. Foster, R.N., M.A. (WVU), *Assistant Professor*.  
 Sharron F. Graham, R.N., M.S. (U. Penn), *Assistant Professor*.  
 Suzanne W. Gross, R.N., M.N.Ed. (U. Pitt), *Assistant Professor; Chairperson, Junior Unit*.  
 Barbara Guthrie, R.N., M.S. (U. Md.), *Instructor*.  
 Debra L. Harr, R.N., M.P.H. (J. Hopkins U.), *Assistant Professor*.  
 Kathleen Heverley, R.N., M.S. (Boston U.), *Instructor*.  
 Jean M. Hoff, R.N., M.P.H. (U. Pitt), *Associate Professor; Assistant Dean*.  
 Joan R. Howard, R.N., M.S.N. (U. Penn), *Associate Professor*.  
 Mary Gail Jacobson, R.N., M.S.N. (Tex. Wom. U.), *Assistant Professor, Charleston Unit*.  
 Lorita D. Jenab, R.N., Ed.D. (Columbia U.), *Professor and Dean*.  
 Dorothy M. B. Johnson, R.N., M.S. (U. Cal., SF), *Assistant Professor; Chairperson, Senior Unit; Assistant Dean for Undergraduate Program*.  
 Judith C. Kandzari, R.N., M.A. (WVU), *Assistant Professor*.  
 Nancy A. Koontz, R.N., M.S.N. (U. Md.), *Associate Professor*.  
 Anita Levin, R.N., M.S. (U. Wisc.—Madison), *Instructor*.  
 Patricia M. McGill, R.N., M.S.N. (Med. C. Va.), *Visiting Instructor*.  
 Gaynelle McKinney, R.N., M.S.N.Ed. (Ind. U.), *Professor*.  
 Margaret A. Marcinek, R.N., M.S. (U. Md.), *Associate Professor*.  
 Kathleen H. Marsland, R.N., M.S. (U. Colo.), *Assistant Professor*.  
 W. Annette Massey, R.N., M.S.N. (Yale U.), *Associate Professor*.  
 Karen E. Miles, R.N., M.S.N. (WVU), *Assistant Professor*.  
 Victoria L. Miller, R.N., M.S.N. (U. Minn.), *Assistant Professor; Chairperson, Sophomore Unit*.  
 Virginia Miller, R.N., M.S.N. (WVU), *Instructor*.  
 Marsha F. Mitchell, R.N., M.S.N. (WVU), *Instructor*.  
 Rita S. Monohan, R.N., M.S.N. (Duke U.), *Instructor*.  
 Marcia Monghate, R.N., M.S.N. (U. Cincinnati), *Assistant Professor*.  
 Cynthia A. Neely, R.N., M.S. (WVU), *Assistant Professor, Charleston Unit*.  
 Lois O'Kelley, R.N., M.S.N. (Wayne St. U.), *Associate Professor*.  
 C. Lynne Ostrow, R.N., M.S. (U. Cal., SF), *Associate Professor*.  
 Carol M. Patton, R.N., M.S.N. (WVU), *Instructor*.  
 Ruth L. Pearson, R.N., M.S. (Ohio St. U.), *Visiting Assistant Professor, Charleston Unit*.  
 Marjorie R. Phillips, R.N., M.N.Ed. (U. Pitt), *Assistant Professor*.  
 Marcia Pollard, R.N., M.S.N. (Penn St. U.), *Instructor*.  
 Luz S. Porter, R.N., Ph.D. (NYU), *Professor; Chairperson, Graduate Unit*.  
 Jacqueline W. Riley, R.N., M.N. (U. Fla.), *Assistant Professor*.  
 Kathleen Schoonover, R.N., M.S.N. (WVU), *Instructor, Charleston Unit*.  
 Jane A. Shrewsbury, R.N., M.N.Ed. (U. Pitt), *Associate Professor*.  
 Jolene M. Simon, R.N., M.N.Ed. (U. Pitt), *Instructor*.  
 Patricia A. Simoni, R.N., M.S.N. (WVU), *Instructor*.  
 Mary Jane Smith, R.N., Ph.D. (NYU), *Professor*.  
 Frances G. Snodgrass, R.N., M.A. (WVU), *Assistant Professor, Charleston Unit*.  
 Jacqueline Stemple, R.N., Ed.D. (WVU), *Associate Professor*.  
 Fredona E. Stenger, R.N., M.S.N. (Boston U.), *Associate Professor*.  
 Margaret Z. Taylor, R.N., M.N.Ed. (U. Pitt), *Associate Professor*.  
 Sheila R. Truby, R.N., M.S. (U. Idaho), *Instructor, Charleston Unit*.  
 Janet F. Wang, R.N., Ph.D. (U. Pitt), *Assistant Professor*.  
 Beverly Zinn, R.N., M.S.N. (WVU), *Instructor*.

# School of Pharmacy

Marie A. Abate, Pharm.D. (U. Mich.), Assistant Professor of Clinical Pharmacy; Assistant Director, Drug Information Center.

C. Bruce Alderman, B.S. (WVU), Clinical Instructor.

Scot A. Anderson, B.S. (WVU), Clinical Instructor.

Irma M. Anido, Pharm.D. (U. Havana), Instructor in Clinical Pharmacy.

Louis J. Anile, B.S. (Duquesne U.), Clinical Instructor.

Julia Bailey, B.S. (WVU), Clinical Instructor.

H. John Baldwin, Ph.D. (Purdue U.), Professor of Behavioral and Administrative Pharmacy; Chairperson, Behavioral and Administrative Pharmacy.

James D. Bartsch, B.S. (U. Wisc.), Clinical Instructor.

Jerry A. Bovenizer, B.S. (WVU), Clinical Instructor.

N. S. Bovenizer, B.S. (Ohio North. U.), Clinical Instructor.

Calvin C. Brister, Ph.D. (U. Miss.), Professor of Biopharmacy.

James A. Calemine, B.S. (WVU), Clinical Instructor.

Mary Ann Capito, B.S. (WVU), Clinical Instructor.

David M. Caplan, B.S. (WVU), Clinical Instructor.

L. Louis Carter, B.S. (WVU), Clinical Instructor.

James K. Coleman, B.S. (WVU), Clinical Instructor.

John E. Corkrean, B.S. (WVU), Clinical Instructor.

Timothy R. Covington, Pharm.D. (U. Mich.), Associate Professor of Clinical Pharmacy; Chairperson, Clinical Pharmacy Programs.

D. Stephen Crawford, B.S. (WVU), Clinical Instructor.

R. Scott Criss, B.S. (WVU), Clinical Instructor.

S. A. Cunningham, C.P.A., B.S. (WVU), Adjunct Assistant Professor of Pharmacy Administration.

Mary E. Davis, Ph.D. (Mich. St. U.), Assistant Professor of Pharmacology.

Robert Davis, B.S. (WVU), Clinical Instructor.

David L. Day, M.S. (WVU), Clinical Instructor.

Lou DeBone, B.S. (Duquesne U.), Clinical Instructor.

James J. Doyle, B.S. (WVU), Clinical Instructor.

Robert Flanagan, B.S. (U. Cincin.), Clinical Instructor.

Jack E. Fruth, B.S. (Ohio St. U.), Clinical Instructor.

Barbara J. Gastineau, B.S. (WVU), Clinical Instructor.

Kenneth H. Gianettino, B.S. (WVU), Clinical Instructor.

Douglas L. Gill, B.S. (WVU), Lecturer in Clinical Pharmacy; Coordinator of Externship Program.

Douglas D. Glover, M.D. (Emory U.), Adjunct Associate Professor.

Harry A. Goodykoontz, B.S. (WVU), Clinical Instructor.

Bonnie S. Grabowski, B.S. (U. Nebr.), Clinical Instructor.

Gwendolyn S. Grant, B.S. (Duquesne U.), Clinical Instructor.

Willard S. Griffith, B.S. (Cincin. C. Pharm.), Clinical Instructor.

John W. Griffiths, B.S. (Ohio St. U.), Clinical Instructor.

Mary Beth Gross, Pharm.D. (U. Utah), Assistant Professor of Clinical Pharmacy.

Roy Gryskevich, B.S. (WVU), Clinical Instructor.

Peter R. Gwilt, Ph.D. (U. Ky.), Assistant Professor of Pharmacokinetics.

Harold H. Harper, M.S. (WVU), Adjunct Assistant Professor of Pharmacy Administration.

Robert E. Hickman, B.S. (U. Cincin.), Clinical Instructor.

Donald M. Hillgoss, Pharm.D. (Phila. C. Pharm.), Clinical Assistant Professor of Clinical Pharmacy; Director, Pharmacokinetics Service, Charleston Area Medical Center.

L. Dean Holmes, B.S. (WVU), Clinical Instructor.

Stephen A. Howard, Ph.D. (U. Mich.), Associate Professor of Pharmaceutics.

Robert H. Hoy, Pharm.D. (U. Cal.), Associate Professor of Clinical Pharmacy; Vice-Chairperson, Clinical Programs, Charleston Division.

Arthur I. Jacknowitz, Pharm.D. (Phila. C. Pharm.), Associate Professor of Clinical Pharmacy; Director, Drug Information Center.

Richard Jarvis, B.S. (WVU), Clinical Instructor.

Robert Johnson, B.S. (U. Iowa), Clinical Instructor.

Patricia Johnston, B.S. (WVU), Clinical Instructor.

Ronald Jones, B.S. (WVU), Clinical Instructor.

Guy Lang, B.S. (WVU), Clinical Instructor.

David Law, B.S. (WVU), Clinical Instructor.

James Kai-jin Lim, Ph.D. (U. N.C.), Professor of Pharmaceutics.

Robert T. Lindsay, M.S. (Mass. C. Pharm.), Clinical Instructor.



John F. Logan, B.S. (WVU), *Clinical Instructor.*  
 Robert B. Lowe, Pharm.D. (U. Mich.), *Clinical Associate Professor of Clinical Pharmacy.*  
 Daniel Lusk, B.S. (WVU), *Clinical Instructor.*  
 Joseph K. H. Ma, Ph.D. (Duquesne U.), *Associate Professor of Medicinal Chemistry.*  
 Carl J. Malanga, Ph.D. (Fordham U.), *Professor of Biopharmacy; Chairperson, Basic Pharmaceutical Sciences.*  
 Mary Lou Malanga, B.S. (Fordham U.), *Clinical Instructor.*  
 Carroll Martin, B.S. (WVU), *Clinical Instructor.*  
 Robert H. Matheny, B.S. (WVU), *Clinical Instructor.*  
 John W. Mauger, Ph.D. (U. R.I.), *Professor of Pharmacy; Coordinator, Graduate Program.*  
 Kenneth F. McNeil, M.S. (U. S. Calif.), *Clinical Assistant Professor.*  
 Ronald W. Meredith, B.S. (WVU), *Clinical Instructor.*  
 Vernon R. Midcap, B.S. (WVU), *Clinical Assistant Instructor.*  
 Sylvia Miles, Pharm.D. (Med. U. S.C.), *Clinical Assistant Professor.*  
 John E. Miller, B.S. (WVU), *Clinical Instructor.*  
 Richard P. Miller, Ph.D. (U. Iowa), *Associate Professor of Biopharmaceutics.*  
 Kenneth Muha, B.S. (U. Ga.), *Clinical Instructor.*  
 Frank D. O'Connell, Ph.D. (Purdue U.), *Professor of Pharmacognosy; Assistant Dean.*  
 John P. O'Donnell, Ph.D. (U. Iowa), *Associate Professor of Medicinal Chemistry.*  
 Don Orlando, B.S. (WVU), *Clinical Instructor.*  
 Janna G. Ott, B.S. (Purdue U.), *Clinical Instructor; Director, Prescription Pharmacy Services.*  
 Rebecca J. Pawlak, B.S. (WVU), *Clinical Instructor.*  
 Debra Warden Phillips, B.S. (WVU), *Clinical Instructor.*  
 Robert B. Pierce, B.S. (WVU), *Clinical Instructor.*  
 John P. Plummer, B.S. (WVU), *Clinical Instructor.*  
 William Plyburn, B.S. (U. Cincin.), *Clinical Instructor.*  
 Charles D. Ponte, Pharm.D. (U. Utah), *Assistant Professor of Clinical Pharmacy.*  
 Terrence S. Prettyman, B.S. (WVU), *Clinical Assistant Professor.*  
 Woodrow J. Proveaux, Pharm.D. (U. Mich.), *Associate Professor of Clinical Pharmacy.*  
 Cecilia Richardson, M.S. (U. Nebr.), *Adjunct Assistant Professor of Biopharmacy.*  
 W. Clarke Ridgway, B.S. (WVU), *Clinical Instructor; Assistant Director, Prescription Pharmacy Services.*  
 David A. Riley, Ed.D. (U. Ga.), *Associate Professor of Behavioral and Administrative Pharmacy; Coordinator of Continuing Education.*  
 Paul Ritchie, B.S. (WVU), *Clinical Instructor.*  
 Randall K. Robinson, B.S. (U. Ky.), *Clinical Instructor.*  
 Sidney A. Rosenbluth, Ph.D. (U. Tex.), *Professor; Dean.*  
 Richard M. Schulz, Ph.D. (U. N.C.), *Assistant Professor of Behavioral and Administrative Pharmacy.*  
 Harry Scott, B.S. (WVU), *Clinical Instructor.*  
 Nicholas J. Scrivo, B.S. (WVU), *Clinical Instructor.*  
 Kathryn Sensabaugh, B.S. (WVU), *Lecturer in Clinical Pharmacy; Coordinator, West Virginia Poison System.*  
 Roger Shallis, B.S. (WVU), *Clinical Instructor.*  
 A. Ray Shaw, M.S. (WVU), *Clinical Instructor.*  
 Maynard Slaven, B.S. (WVU), *Clinical Instructor.*  
 Everett B. Stanley, B.S. (WVU), *Clinical Instructor.*  
 James G. Stevenson, Pharm.D. (Wayne St. U.), *Assistant Professor of Clinical Pharmacy.*  
 Robert Stout, B.S. (WVU), *Clinical Instructor.*  
 Eugene S. Stratford, Ph.D. (Ohio St. U.), *Associate Professor of Medicinal Chemistry.*  
 Basil G. Swisher, M.S. (WVU), *Adjunct Assistant Professor of Pharmacy Administration.*  
 Robert H. Taylor, B.S. (WVU), *Clinical Instructor.*  
 Edward A. Toompas, B.S. (WVU), *Clinical Instructor.*  
 Irvin Van Meter, B.S. (WVU), *Clinical Instructor.*  
 Patricia A. Weaver, B.S. (Duquesne U.), *Clinical Instructor.*  
 Arlie A. Winters, B.S. (WVU), *Clinical Instructor.*  
 Albert F. Wojcik, Ph.D. (U. Pitt), *Professor of Pharmacy Administration; Coordinator, Alumni Affairs.*  
 Fred L. Zicafoose, B.S. (WVU), *Clinical Instructor.*  
 John F. Ziolkowski, M.S. (Brooklyn C. Pharm.), *Clinical Instructor.*

## Medical Center Staff

Marguerite E. Abel, B.S.L.S. (U. Ill.), *Assistant Librarian.*  
John Ambrose, *Superintendent, Maintenance.*  
Maureen Conley, M.S.L.S. (U. Pitt), *Network Librarian.*  
Elizabeth S. Furfari, B.S.J. (WVU), *Information Officer.*  
Gordon J. Gee, B.S. (Rochester Inst., N.Y.), *Supervisor, Biomedical Photography.*  
Harold H. Harper, M.S. (WVU), *Assistant to Vice-President—Health Sciences.*  
Linda M. Jacknowitz, M.S.L.S. (SUNY), *Audiovisuals Librarian.*  
Lee E. McIntyre, *Supervisor, Electronics Laboratory.*  
J. Allyson McKee, M.S.L.S. (U. Pitt), *Technical Services Librarian.*  
Fred S. Marstiller, *Supervisor, Audiovisual Television.*  
Robert L. Murphy, M.S.L.S. (Cath. U. Am.), *Director, Medical Center Learning Resources.*  
Irene J. Roby, *Assistant to Dean, Admissions and Records.*  
J. Richard Toren, B.S.J. (WVU), *Associate Director, Public Affairs/Medical Center News Service.*  
Mary Ellin Wylie, B.A. (WVU), *Information Officer.*

## University Hospital

David J. Fine, M.H.A. (U. Minn.), *Administrator.*  
Charles E. Flink, M.B.A. (WVU), *Associate Administrator.*  
Bernard G. Westfall, M.B.A. (WVU), *Associate Administrator.*  
Michael J. Stein, M.H.A. (Duke U.), *Assistant Administrator.*  
Anna Moson, M.Litt. (U. Pitt), *Director, Nursing Service.*  
Virginia H. Nugent, *Administrative Assistant.*  
Helen M. Dorohovich, *Director of Volunteers.*  
Pamela C. Shier, M.Div. (Episcopal Div. Sch., Mass.), *Hospital Chaplain.*

## Department Heads

*Clinical Laboratories*, Richard M. Iammarino, M.D. (Loyola U., Chicago)  
*Dietary*, Margaret P. Abbott, M.P.H. (U. Minn.)  
*Hospital Computer Systems*, Robert R. Smith  
*Medical Records*, Jeffrey M. Stull, B.A. (WVU)  
*Nursing Service*, Kathleen A. Moore, B.S. (Alderson-Broadbudd C.), *Associate Director*;  
Joan Berry, R.N., and Jaretta Faust, R.N., *Assistant Directors*  
*Pathology*, Nathaniel F. Rodman, M.D. (U. Penn)  
*Pharmacy*, Sylvia Miles, Pharm.D. (Med. U. S.C.)  
*Physical Therapy*, Sandy C. Burkart, Ph.D. (WVU)  
*Radiology*, Orlando F. Gabriele, M.D. (Yale U.)  
*Social Service*, Don E. Killen, M.S.W. (U. Pitt)  
*University Health Service*, Edwin J. Morgan, M.D. (U. Pitt)

1983-84 Medical Center Catalog  
West Virginia University  
Office of Admissions and Records  
Morgantown, WV 26506

West Virginia University Bulletin  
(USPS 676-980) (ISSN 0362-3009)  
Second Class Postage Paid at  
Morgantown, WV 26505









